

Geocentrism 102

An Introduction into the History of the Church versus Galileo

Recommended for High School,
College and Adult

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Published by Catholic Apologetics International Publishing, Inc., 2014

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1-800-531-6393

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Library of Congress Cataloging-in-Publication Data

Sungenis, Robert, A, Sr.

Geocentrism 102 by Robert A. Sungenis, Ph.D.

Bibliographical reference

Geocentrism. 2. Cosmology 3. Physics. 4. Galileo 5. Catholic Church

Cover design by Robert Sungenis.

Scripture translations taken from RSV, NAB and the author's own.

First edition, paperback

ISBN-13: 978-1-939856-47-0

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Contents

Introduction	I
The Social Impact of the Copernican Revolution	4
The Impact on the Modern Catholic Church	6
The Impact on Scripture Interpretation	8
The Impact on Catholics and Protestants	11
The Impact on People in General	13
A Worldwide Paradigm Shift	16
 Chapter 1: Church Confronts Copernican Cosmology	 21
1500-1600: Rheticus and Copernicus	21
1566: Pius V's Catechism of the Council of Trent	22
1615: Church Confronts Fr. Paolo Antonio Foscarini	27
 Chapter 2: The Fathers, the Medievals, and Scripture	 37
The Consensus of the Fathers	37
Scripture's Testimony on Geocentrism	43
Language of Fact versus Language of Appearance	48
Official Statements on the Inerrancy of Scripture	51
Scriptural Passages on Teaching Geocentrism:	54
Joshua 10:10-14	54
Ecclesiasticus (Sirach) 46:3-5	60
Habakkuk 3:11	61
1Chronicles 16:30	61
Psalm 93:1-2	61
Psalm 96:9-11	63
 Chapter 3: The Church's Case Against Galileo	 65
Analysis of Galileo's Letter to Benedetto Castelli	68
The Trial of Galileo	82
Pope Urban VIII Appeals to the Grand Duke	88
The Sentence and Punishment of Galileo	93

Chapter 4:	
Galileo Converts to Geocentrism	107
Galileo's Conversion to the True Catholic Faith	111
 Chapter 5: Subsequent Popes' Dealing with Galileo	 115
Pope Alexander VII's 1664 <i>Index of Forbidden Books</i>	115
The First Index of Benedict XIV	117
The Second Index of Pope Benedict XIV, 1758	118
Pietro Lazzari Attempts to Exonerate Galileo	119
The Rebuff to Astronomer Joseph Lalande	125
The Disclaimer on Newton's <i>Principia Mathematica</i>	125
 Chapter 6: The 1820 Imprimatur and 1835 Index	 131
Pius VII and Canon Settele's Imprimatur	131
The Battle between Anfossi and Olivieri	132
The 1835 Index of Pope Gregory XVI	165
The Trial versus the Index	172
 Chapter 7: Other Popes of the 19th and 20th Centuries	 175
1893: Leo XIII's Encyclical: <i>Providentissimus Deus</i>	175
1921: Benedict XV's Encyclical: <i>In Praeclara Summorum</i>	180
Are the 1616-1664 Papal Decrees Infallible?	184
1870: Vatican I, the Ordinary Magisterium	194
1965: Vatican Council II's <i>Gaudium et spes</i>	199
 Chapter 8: John Paul II Reexamines Galileo	 201
General Analysis of John Paul II's 1992 Speech	203
A Logical and Inevitable Warning to the Church	205
How Then Should the Church Proceed?	209
Detailed Analysis of John Paul II's 1992 Speech	213
Canon Giuseppe Settele's Imprimatur	227
The 1835 Index of Gregory XVI	233
A Closer Look at the "Error of the Theologians"	242
<i>Lumen Gentium</i> 12: "The Whole Body...Cannot Err"	251
 Endnotes	 254

This book is dedicated to:

St. Robert Cardinal Bellarmine

and

Father Filippo Anfossi, Master of the Sacred Palace

For their courage and foresight in standing up
to the unproven theories of Galileo Galilei



Roberto Card. Bellarmine.

"But more dangerous is the error of certain weak brethren who faint away when they hear these irreligious critics learnedly and eloquently discoursing on the theories of astronomy or on any of the questions relating to the elements of this universe. With a sigh, they esteem these teachers as superior to themselves, looking upon them as great men; and they return with disdain to the books which were written for the good of their souls; and, although they ought to drink from these books with relish, they can scarcely bear to take them up."

St. Augustine¹

"Such as?' Her tone was mean and abrupt. A rush of argument broke from Slote, as though he wanted to conquer her with words in Byron's presence, if he could do nothing else. He began stabbing one finger in the air, like exclamation points to his sentences. 'Such as, my dear, that Christianity is dead and rotting since Galileo cut its throat.'"

Slote²

"If I have spoken to you earthly things, and you believe not; how will you believe if I shall speak to you heavenly things?"

Jesus Christ³

"The person who thinks there can be any real conflict between science and religion must be either very young in science or very ignorant of religion."

Joseph Henry⁴

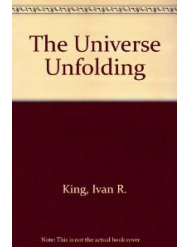
"It follows from this that our notions of physical reality can never be final. We must always be ready to change these notions."

Albert Einstein⁵

Introduction



Galileo was wrong?! How could modern men from the twenty-first century dare to make a documentary with such a title? No doubt, almost every movie made and book written about cosmology in modern times begins with the premise that Galileo's heliocentric cosmology was correct and the Catholic Church that condemned him was very mistaken. Typical remarks in media publications about Galileo begin with very stern and foreboding words. The reader is simply not permitted to entertain any other possibility as to the construction and movements of the cosmos. As **Ivan R. King**, professor of astronomy at the University of



Washington and author of *The Unfolding Universe*, put it: "Galileo...who produced *the irrefutable proofs of the Sun-centered system*...came into direct and disastrous conflict with the Church."⁶ **Giorgio de Santillana** of the Massachusetts Institute of Technology and author of *The Crime of Galileo*, assures us that everyone "...knows quite well that the Earth goes around the sun..."⁷ **Dava**

Sobel, author of the popular book, *Galileo's Daughter*, says:

Who better than Galileo to propound the most stunning reversal in perception ever to have jarred intelligent thought: We are not the center of the universe. The immobility of our world is an illusion. We spin. We speed through space. We circle the Sun. We live on a wandering star.⁸



The reader, not knowing any differently, doesn't give the author's assertion a second thought for all his life he has been taught that the Earth revolves around the sun, and he has placed himself under the edict that this particular teaching of modern science is no more to be doubted than the fact that fish swim or that birds fly.

As the typical author begins from the unquestioned premise that Galileo's sun-centered world has been indisputably proven, he will postulate various reasons why the Catholic Church did not accept this new and improved model of the universe. The suggestions are many and varied, ranging from "ecclesiastical bureaucracy," "deliberate chicanery," "religious fundamentalism," "corporate interests" to "unfair tactics,"⁹ but

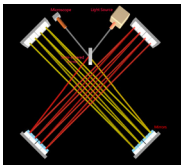
Introduction

there is little doubt that virtually all the biographers and historians will dismiss the possibility that Galileo was wrong.

Let's ask a few questions to test your knowledge about science in general and the Catholic Church's dealing with Galileo and heliocentrism in particular:



- Did you know that officials of the Holy Office of the Catholic Church, in both 1616 and 1633, condemned as heretical the concept of heliocentrism (the belief that the earth revolves around the sun), and the condemnation was officially approved by two popes, Paul V and Urban VIII?
- Did you know that all the proposed proofs for a heliocentric universe have been discredited by new understandings of physics in modern science, especially by its own theory of Relativity?



- Did you know that there have been dozens of experiments performed to detect for a movement of the Earth around the sun but all of them have not been able to detect any movement?

- Did you know the Catholic Church has never officially rescinded its condemnation against heliocentrism or its belief in geocentrism?



- Did you know that the Church Fathers in absolute consensus, held that Scripture taught the sun revolved around a motionless Earth, and they rejected the heliocentrism taught by the Greeks?

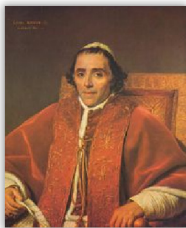
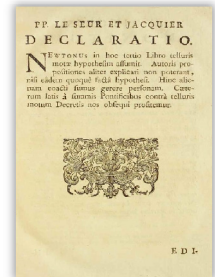
Introduction

- Did you know that the Council of Trent dogmatically stated that any teaching from Scripture or Tradition in which the Fathers held a consensus was required for us to believe and hold as doctrine?



- Did you know that the 1566 Catechism of the Council of Trent endorses the doctrine of geocentrism in four separate places?

- Did you know that Catholic disclaimers were put on Isaac Newton's *Principia Mathematica* from 1687 through 1833 because it taught heliocentrism?



- Did you know that the only two instances in which the Church made concessions to heliocentric authors occurred in 1820 and 1835 because of fallacious information given to the pope concerning both the science and the history of the Church's dealing with Galileo which occurred two centuries earlier?

- Did you know that the presumption that the Church erred in the Galileo affair was one of the main reasons for initiating Vatican Council II, but in the end the Council said nothing about it and made no changes to the Church's official and traditional interpretation of Scripture?





- Did you know that without any official statement from the Catholic Church, modernistic arms of the Church such as the Pontifical Academy of Science, as well as Catholic seminaries, universities, high schools, CCD classes make it appear that the Church's official position is heliocentrism and that Vatican II changed the Church's interpretation of Scripture to account for it?

The Social Impact of the Copernican Revolution

As we go through the history of the Church's dealing with the Galileo and the heliocentric doctrine, we will see that it is not just a matter of cosmology but, more importantly, a matter of the identity and divine commission of the Catholic Church at large; a matter of the true nature and proper interpretation of Sacred Scripture; a matter of whether the Church is the supreme teacher of the world or is just another player among equals. Most people of the modern age are unaware that it was the Copernican Revolution that changed everything. It was the one event in the history of man next to the advent of Christ himself, that put the whole world on a different course than it had been previously. As the poet **Johann von Goethe** said it:

But among all the discoveries and corrections probably none has resulted in a deeper influence on the human spirit than the doctrine of Copernicus.... Possibly mankind has never been demanded to do more, for considering all that went up in smoke as a result of realizing this change: a second Paradise, a world of innocence, poetry and piety: the witness of the senses, the conviction of a poetical and religious faith. No wonder his contemporaries did not wish to let all this go and offered every possible resistance to a doctrine which in its converts authorized and demanded a freedom of view and greatness of thought so far unknown indeed not even dreamed of.”¹⁰



Introduction

The great historian **Alexander Koyré** understood the same. He writes:

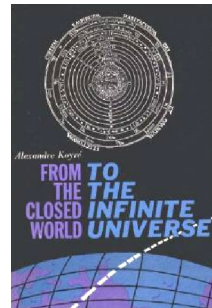


The dissolution of the Cosmos...this seems to me to be the most profound revolution achieved or suffered by the human mind since the invention of the Cosmos by the Greeks. It is a revolution so profound and so far-reaching that mankind – with very few exceptions, of whom Pascal was one – for centuries did not grasp its bearing and its meaning; which, even now, is often misvalued and misunderstood.

Therefore what the founders of modern science, among them Galileo, had to do, was **not** to criticize and to combat certain faulty theories, and to correct or to replace them by better ones. They had to do something quite different. They had to destroy one world and to replace it by another. They had to reshape the framework of our intellect itself, to restate and reform its concepts, to evolve a new approach to Being, a new concept of knowledge, a new concept of science – and even to replace a pretty natural approach, that of common sense, by another which is not natural at all.¹¹

In another work *From the Closed World to the Infinite Universe* Koyré writes:

I need not insist on the overwhelming scientific and philosophical importance of Copernican astronomy, which, by removing the earth from the center of the world and placing it among the planets, undermined the very foundation of the traditional cosmic world-order...as we know, the immediate effect of the Copernican revolution was to spread skepticism and bewilderment....



At the end we find nihilism and despair....The infinite Universe of the New Cosmology, infinite in Duration as well as in Extension, in which eternal matter in accordance with eternal and necessary laws moves endlessly and aimlessly in eternal space, inherited all the ontological attributes of Divinity. Yet only those – all the others the departed God took away with Him.¹²

Introduction

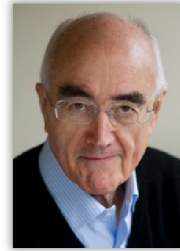
The famed writer, Arthur Koestler, says it this way:



The new philosophy destroyed the mediaeval vision of an immutable social order in a walled-in universe together with its fixed hierarchy of moral values, and transformed the European landscape, society, culture, habits and general outlook as thoroughly as if a new species had arisen on this planet.¹³

Historian James Burke adds:

In every other respect, however, Copernicus struck at the heart of Aristotelian and Christian belief. He removed the Earth from the center of the universe and so from the focus of God's purpose. In the new scheme man was no longer the creature for whose use and elucidation the cosmos had been created.¹⁴



Historian Herbert Butterfield's in his book *The Origins of Modern Science*: says:



Since it [the Copernican Revolution] changed the character of men's habitual mental operations even in the conduct of the non-material sciences, while transforming the whole diagram of the physical universe and the very texture of human life itself, it looms so large as the real origin both of the modern world and of the modern mentality, that our customary periodisation of European history has become an anachronism and an encumbrance.¹⁵

The Impact of the Copernican Revolution on the Modern Catholic Church

One of the most fascinating pieces of information surrounding the Galileo affair and its modern aftermath is what Pope Benedict XVI recently revealed about its connection with Vatican Council II. In 1962 he was Father Joseph Ratzinger and he attended the Council. When he became Pope Benedict XVI some fifty years later, he recalled that one of the major reasons the Church had initiated the Council was that many of

Introduction

its bishops believed that the Church had made a mistake in condemning Galileo and the heliocentric system. The context of Pope Benedict's words are as follows:



So we went to the Council not only with joy, but with enthusiasm. There was an incredible anticipation. We hoped that everything would be renewed, that a new Pentecost would truly come, a new era of the Church...And we knew that

the relationship between the Church and the modern period was a bit in conflict, beginning with the error of the Church in the case of Galileo Galilei; we thought we could correct this wrong beginning and find the union between the Church and the best forces in the world in order to open up the future of humanity, to open true progress. So we were full of hope, of enthusiasm, and of the will to do our part for this thing.¹⁶

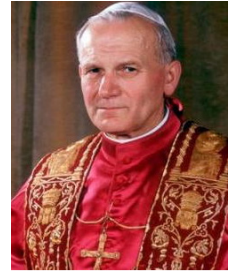
Since Father Joseph Ratzinger was present at the Council in 1962 and personally knew many of its major participants, his inside knowledge of what we can now call the “Galileo mentality” of Vatican II, must be taken as a reliable testimony. Due to his witness, it may be safe to conclude that if the Church of 1962 had not concluded that the Church of 1633 made an “error” in the Galileo case, Vatican Council II may have never happened. Regardless of this speculation, we are faced with the dilemma that either the 1616 and 1633 Church were in error for condemning Galileo, or the Church of 1962 was in error for initiating Vatican II based on presuming the Church of 1616 and 1633 were in error. Someone is in error. What our scientific documentary has revealed is that modern science has now shown that the Church of 1616 and 1633 were not in error. What our historical documentary will show is precisely what happened inside the Church since 1633 for it to come to the point in 1962 that its prelates came under the false notion that the traditional Church had erred.



The Impact of the Copernican Revolution on Scripture Interpretation

One of the greatest impacts of the “Galileo mentality” among the prelates of Vatican Council II was how it affected our understanding of Scripture. In his speech to the Pontifical Academy of Science in 1992 the pope said these astounding words about the interpretation of Scripture, words that had never been uttered in the two thousand years prior. In paragraph 6 he stated:

The upset caused by the Copernican system thus demanded epistemological reflection on the biblical sciences, an effort which later would produce abundant fruit in modern exegetical works and which has found sanction and a new stimulus in the Dogmatic Constitution *Dei Verbum* of the Second Vatican Council.



In other words, the Catholic prelature’s belief that the “Copernican system” was proven correct by modern science and that geocentrism was proven wrong, is now presumed to be sanctioned by one of the most important documents of Vatican II, the treatise on Scripture, known as, *Dei Verbum*. There could not be a more earth-shattering theological statement made in the 1992 speech. Essentially, what the 1992 speech claims is that because of Copernicus’s new cosmology, millennia of Catholic biblical interpretation could suddenly be dismissed by a new and improved interpretation, and the new interpretation was sanctioned by the document *Dei Verbum*. There is only one problem with that claim. It isn’t true. Vatican II’s *Dei Verbum* gave no such sanction or stimulus to a new exegesis of Scripture. As we will see, rather, the modernists at Vatican II twisted one simple phrase of *Dei Verbum*, namely, “for the sake of our salvation,” to make it *appear* that Scripture was only inerrant when it addressed salvation and could be in error if it addressed any other issue, including cosmology.¹⁷



That there was a division between traditionalists and modernists at Vatican II is not mere speculation. One of the highest ranking cardinals of the Church, **Cardinal Walter Kasper**, stated recently that in various instances the wording of Vatican II’s documents was made deliberately ambiguous so that both the traditional side and the modern side could formulate different interpretations subsequent to the

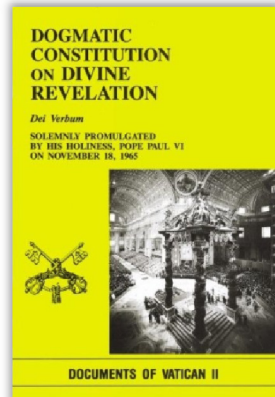
Introduction

Council.¹⁸ In April 2013, he stated:

In many places, [the Council Fathers] had to find compromise formulas, in which, often, the positions of the majority are located immediately next to those of the minority, designed to delimit them. Thus, the conciliar texts themselves have a huge potential for conflict, open the door to a selective reception in either direction.” “For most Catholics, the developments put in motion by the council are part of the church’s daily life. But what they are experiencing is not the great new beginning nor the springtime of the church, which were expected at that time, but rather a church that has a wintry look, and shows clear signs of crisis.” “For those who know the story of the twenty councils recognized as ecumenical, this [the state of confusion] will not be a surprise. The post-conciliar times were almost always turbulent. The [Second] Vatican, however, is a special case.”

Consequently, the floodgates were open for post Vatican II scholars and ecclesiastics to reject or modify Catholicism’s traditional beliefs. This resulted in an immediate spiritual decline in the Church as soon as Vatican II’s doors were closed in 1965. The numbers of churches, priests, seminarians, nuns and Catholic schools began to dwindle very rapidly and social upheaval in the Church and the world became unprecedented. We might conclude that the very prelature that called the Council in 1962 to correct the “errors” of the past were themselves in error for distancing the Church from its past. Moreover, there is no way out of this negative scenario for Vatican II’s prelature, since if they reserve the right to accuse the Church’s past of error, then there is nothing to make themselves immune from a similar or even bigger error. As the old saying goes, ‘what goes around comes around,’ or, better, ‘what is good for the goose is also good for the gander.’

Vatican II’s pro-Galileo mentality led to a complete revamping of how the Catholic Church understood herself and her scriptural foundation, which, incidentally, began in the mid-1800s after Gregory XVI took Galileo’s book off the Index in 1835. The new view of Church and Scripture was seeded when the modernists got hold of Pius XII’s 1943 encyclical *Divino Afflante Spiritu*, and ended with the modernist’s seizure of **Vatican II’s *Dei Verbum* 11**. Consequently, because of the “Galileo mentality,” it is safe to say that the



Introduction

presumed “error” of the 1633 Church caused a tidal wave of criticism against the Bible that became prevalent both in the mainline Protestant churches and the Catholic Church with great force. Along with the new “critical” interpretations of Scripture came a whole new set of mores and practices (including sex, sexual roles, marriage, reproduction, other religions, miracles, politics, *etc.*). Just about any traditional belief or practice could be brought into question based on the idea that past theologians simply misinterpreted the Bible and/or mistakenly believed the Bible had the authority to determine an issue that was outside the strict bounds of salvation.

Examples of this deterioration in the 20th century are manifold, but one stands out. On a trip to Scotland a few years ago, Pope Benedict XVI was confronted by a mural on a city wall depicting a woman dressed as a priest and flanked on either side by Galileo and Copernicus with the word “oops!” at the bottom of each picture. The message was clear: as the Church is presumed to have made a mistake with Galileo and Copernicus, she is also presumed to have made a mistake in barring women from the priesthood. In fact, everything from homosexuality, divorce, remarriage, contraception, abortion, genetic engineering to cloning, the Catholic Church has been relentlessly stigmatized as a primitive and out-of-touch institution in the modern age, beginning with her mistake concerning Galileo, which stigma she now carries over into every other area of life. The complaint is often heard: ‘How can the Catholic Church claim to be infallible when, in fact, she put the weight of the magisterium behind her traditional interpretation of Scripture in order to condemn Galileo and his heliocentric system, yet we now know she was totally wrong?’ This seems to be a legitimate question. If the Catholic Church was wrong about what she not only claimed to be right, but of which she also claimed that she had sole authority to judge, how could we ever trust her to handle even more complex issues?

Ironically, although the desire to correct past “errors” of the Church may have been in the mind of many of the Vatican II prelature (including Father Joseph Ratzinger), in the end Vatican II said nothing about Galileo, even though, as we shall see later, attempts were made by various liberal factions to have the Council exonerate Galileo. The closest Vatican II



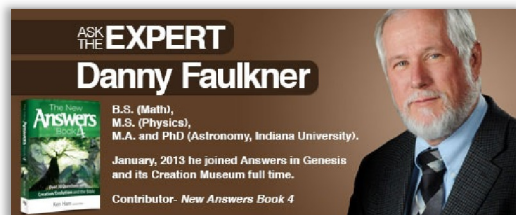
Introduction

came to even alluding to the Galileo case was a statement in *Gaudium et spes* saying that the Church should allow science freedom to do science. Yet, even this statement was innocuous, since the Church had never been against allowing science to do science. Science collects data. It has invented many sophisticated instruments to do so. It makes wonderful machines to benefit our lives. The Church accepts these inevitabilities. She has only interjected, as was the case with Galileo, if and when science's *interpretation* of the data conflicts with the settled doctrines of Christianity, at which instance the interpretation is wrong and needs to be modified or replaced. Scientific data is plentiful and very useful. But a scientist's *interpretation* of scientific data is often as fraught with misunderstanding and error as a private theologian's interpretation of Holy Scripture. There are so many personal biases and philosophies that influence interpretation it is a wonder we ever arrive at the truth. Disagreement on the interpretation of Scripture is the very reason for the split of the eastern from the western Church in 1054 and the Protestant Reformation in 1520, among many other minor splits that number in the tens of thousands.

The Impact on Catholics and Protestants

As regards to being influenced by the aura of science, Catholics are not alone. Protestants are also prone to biased influence from modern academia. Although some Protestants have forged a valiant fight against evolution by employing the experimental data of science itself, when issues of cosmology arise, most Protestants invariably side with Darwin's intellectual cousins, e.g., Copernicanism, the Big Bang and Einstein's Relativity. They do so for the same reason Catholics do — it is much too embarrassing in today's world to take a strict literal view of the Bible and believe the Earth was made first, is motionless, and was placed in the center of the universe. As one popular Protestant **Danny Faulkner** puts it, “While geocentrists are well intended, their presence among recent creationists produces an easy object of ridicule by our critics.”¹⁹ The quest today is to appear intelligent and well-versed in modern scientific thought so that the world might not view Christians as ignoramuses or fanatics that cannot accept reality.

On the one hand, while conservative Protestants tout the literal interpretation of Genesis as a necessary foundation for dealing with Darwin's evolution, yet as the Bible's literal teaching on geocentrism is



Introduction

found in the same chapter, Genesis 1, suddenly their pious devotion to literalism vanishes and Scripture is demoted to symbols and metaphors. Protestant conservatives are so staunch in interpreting Genesis 1:20-31 as literally as possible (which deals with the chronology of the creation of the fish, birds, animals and man) but invariably render Genesis 1:1-19 as non-chronological (which is the creation of the Earth, firmament, plants, and celestial bodies). Whether they realize it or not, dichotomizing Genesis 1 in this way is a blatant contradiction in their hermeneutic.

On the other hand, Catholics have a long tradition of interpreting the Bible literally, even more so than Protestants. The core of Catholic theology—the sacraments—is based on the literal interpretation of such passages as Matthew 26:26 (where Jesus says “Take and eat. This is my body”), which is interpreted as referring to the literal body of Christ, whereas most Protestant denominations have a visceral aversion to such literalism and thus believe that Jesus was only speaking symbolically. Similarly, Catholics believe the words of John 3:5 (where Jesus says, “unless a man is born of water and the Spirit”) require literal water be employed as the means of receiving God’s grace, such that without the proper application of water salvation is not procured; whereas most Protestant denominations believe it is silly to interpret such passages literally, opting for a water that is merely a symbol for cleansing.

Conversely, when the modern Catholic is discussing passages in Genesis concerning cosmogony and cosmology—in which it is actually easier to believe the Earth is young and in the center of the universe than it is to believe a wafer of bread becomes the body of Christ—he has been duly conditioned by modern science to figuratize Genesis while he literalizes the Gospels. A more contradictory state of affairs is hard to imagine.

The reason for these hermeneutical contradictions is simple. Both Catholics and Protestants have been unduly influenced by scientists in white lab coats who purport to have discovered a cosmology that contradicts a literal reading of Genesis 1. Since these scientists have earned their stripes by providing fantastic machines that greatly benefit mankind, the logic is that we should also accept their speculations on the cosmos. The scientists have convinced the religionists that the scientists know better and that it would be foolish to argue against their theories and equations. As such, scientists are quite a formidable foe, to say the least. In many cases, they are the modern version of Goliath. But as we have seen in our book *Geocentrism 101*, once one puts his mind and will to work, it is rather easy to blow down the house of cards that modern cosmology and cosmogony has built for itself, especially when they admit their own ignorance and weaknesses in these two areas.

The Impact on People in General

As the fallacious philosophical foundations and presumptuous scientific theories are exposed, we will have a whole new perspective from which to examine the historical issues concerning the Church's dealing with Galileo. No longer will we be forced to search, as most Galileo historians are prone to do today, for the "real" reason the Church condemned Galileo and heliocentrism. We already know the real reason, and it is simple: Galileo was wrong and the Church was right.

Once we see how the modern scientific community, stemming mainly from the theories of Albert Einstein who misrepresented the scientific data in order to avoid the clear evidence that Earth was motionless in the center of the universe, we will no longer be embarrassed but will hold our heads up high, realizing that the Holy Spirit has been guiding the Church throughout the centuries with the knowledge that Earth is, indeed, in a very special place. We will see that geocentrism was, and still is, the Church's official teaching on cosmology, regardless whether Catholic clerics are willing to admit it. It began with the Church Fathers and was handed down to the medievals, through the Tridentine catechism, and capped by the diligent work and permission of two popes, Paul V and Urban VIII, who dealt directly with Galileo, and many more prelates who preserved their work in later centuries.

Although many are under the assumption that the Catholic Church has officially thrown in the towel on the Galileo issue, such is hardly the case. There is a very big difference between the popular opinions among various Catholics and the official teaching in the Catholic Church, especially in the aftermath of Vatican Council II. The Church's last remaining official statement on the Galileo case still upholds the condemnation of both Galileo and heliocentrism, in spite of what is often made of John Paul II's speech to the Pontifical Academy of Science in 1992, which was neither an official teaching of the Catholic Church nor did it say anything definitive to settle the issue.

We will also find in our historical study that the two instances in which the Church seemed to relax some of its earlier condemnations against heliocentrism, namely, the issuance of an imprimatur in 1820 to Canon Settele's book on heliocentrism, and the removal of Galileo's name from the *Index of Forbidden Books* in 1835 in the reign of Gregory XVI, are instances filled with ecclesiastical malfeasance, and which, in spite of it all, do nothing to change the Church's tradition and the decrees of 1616 and 1633 when Galileo and heliocentrism were condemned.

Suffice it to say, when a thorough investigation is brought to bear on these events, everything will begin to make sense. We will understand why our Church Fathers maintained a unanimous consensus on the topic of

Introduction

geocentrism against the Greek Pythagorean school that promoted heliocentrism. We will understand why the medieval theologians likewise were unswerving in their belief in geocentrism, and why the Tridentine fathers included four citations promoting geocentrism in the 1566 catechism. We will discover why Paul V and Urban VIII were so vociferous against Galileo and why they both worked diligently behind the scenes, long before his 1633 trial, to silence him and the heresy of heliocentrism, and how this was supported by many other popes, cardinals and bishops who followed them.

We will also see that, even in recent times, the Church has shown indications she is still abiding by her historical condemnations. For example, in 1833, only 180 years ago, a Catholic disclaimer was put on Newton's *Principia* stating: "the Supreme Pontiffs have decreed against Newton that the Earth does not move." In 1850, only 164 years ago, the Church commissioned Mario Marini to write a book defending the Church's stand against heliocentrism. In 1942, only 72 years ago, the president of the Pontifical Academy of Science, Agostino Gemelli, said that Galileo did not provide a decisive demonstration of Copernicanism, and neither did Newton, Bradley, or Foucault. In 1963-65, only 50 years ago, Vatican II refrained from endorsing heliocentrism or saying that the Church made a mistake in teaching geocentrism, even though many clerics were clamoring for it. So, within the last century or two, we see the Church continuing to make comments supporting the prior tradition on geocentrism, and issuing no official statement rejecting what the Church previously decreed against heliocentrism.

At the same time, however, we must admit that although the Catholic Church made no *official* statement rejecting geocentrism and endorsing heliocentrism and is presently the common belief in the hierarchy and the Catholic populace today that the Church of 1616 and 1633 erred in their condemnations of heliocentrism. The belief that the medieval Church had erred is so prevalent it can be safely said, as even Pope Benedict XVI finally admitted, that one of the main reasons Vatican Council II sought to reword certain Catholic beliefs is because many prelates believed that if the Church had erred in the past with Galileo (whether that error was in condemning heliocentrism or even believing that the Church had the right to make decisions on a scientific issue), then the Church might have erred, or possibly have been shortsighted, in other areas, and thus she needed to have her beliefs "readjusted," as it were, to conform to current times.

In a word, we might say that there was somewhat of a "Copernican revolution" at Vatican Council II. One of the more controversial documents of Vatican II is titled *Nostra Aetate*, literally meaning, "In Our Times." The title implies that the modern climate requires the Church to either "adjust" the traditional view or seek for a different emphasis on

Introduction

Church teaching that was previously only a cursory opinion or *obiter dicta*. Other such controversial documents of this nature in Vatican II are *Dignitatis humanae*, *Dei verbum*, *Lumen gentium*, *Gaudium et spes*, and *Unitatis redintegratio*. Essentially each of these documents appears to bring the Church closer to the world's views on religion, science, history, and politics. The melding was made more prominent and pervasive when the documents were interpreted by the more liberalized factions in the Catholic Church of the latter twentieth century (as contrasted with pre-twentieth century conservative Catholicism). Not surprising is the fact that all of them have one thing in common – they all believe the Church erred concerning Galileo and thus could have erred in other issues as well.

Be that as it may, we receive the impetus for our historical and scientific reexamination from the words of John Paul II to the Pontifical Academy of Science in November 1992:

“It is a duty for theologians to keep themselves regularly informed of scientific advances in order to examine...whether or not there are reasons for taking them into account in their reflection or for introducing changes in their teaching.”



Keeping “regularly informed of scientific advances” so that theologians can “introduce changes in their teaching” is precisely what this book encourages modern “theologians” to do. When they realize there is no scientific proof for heliocentrism, and that geocentrism has much more scientific credibility than previously reported, they should, as John Paul II admonished them, have enough information to “introduce changes in their teaching” as they consider the facts of science in a whole new way, leading,

hopefully, to a moratorium on apologizing for the popes and cardinals of the seventeenth century and, in turn, giving them the respect they are due as stewards of the Gospel. Once an honest, studious and open-minded analysis is made of the scientific and historical evidence, one will be able to see that the Holy Spirit was, indeed, guiding the Church of yesteryear to censor Copernicanism and, in turn, insist that we take Scripture's propositions at face value. Without scientific proof for heliocentrism, today's Church is under no obligation to entertain Copernicanism as more than a curious hypothesis, and, consequently, she is neither under divine compulsion nor can claim any reason to abandon the literal interpretation of Scripture.

A Worldwide Paradigm Shift

As you read this book, you will see that the Holy Spirit's promise to lead the Church into all truth until the end of time (John 14:16) has been fulfilled, since, by the discoveries of modern science, geocentrism has been shown to be scientifically accurate. This is why the Holy Spirit disallowed the Church to change her doctrine, in any official manner. You will see that what is happening today to promote the contrary is a plot by principalities and powers to dethrone the Church and make atheistic science the god of this world. But it will no longer stand. The god of this world will be defeated, just as David killed Goliath. It is time for a spiritual revolution and, to borrow the words of historian Thomas Kuhn, to produce a worldwide "paradigm shift." You will help make it part of history.

The paradigm shift, ironically, begins with the same man, Joseph Ratzinger, who admitted that one of the main factors in initiating Vatican Council II was that its clerics believed the Church had erred in the 1600s regarding Galileo. Some three decades after Vatican II, in March 1990, this same man, then a cardinal, gave a speech in Parma Italy and admitted that the Church could not have erred in the Galileo case. Here are his words:



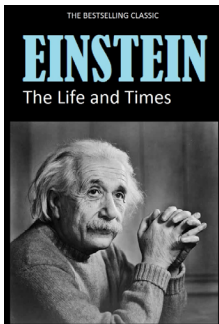
The question of the limits of science, and the criteria which it must observe, has become unavoidable. Particularly emblematic of this change of intellectual climate, it seems to me, is the different way in which the Galileo case is seen. This episode, which was little considered in the 18th century, was elevated to a myth of the Enlightenment in the century that followed. Galileo appeared as a victim of that medieval obscurantism that endures in the Church. Good and evil were sharply distinguished. On the one hand, we find the Inquisition: a power that incarnates superstition, the adversary of freedom and conscience. On the other, there's natural science represented by Galileo: the force of progress and liberation of humanity from the chains of ignorance that kept it impotent in the face of nature. The star of modernity shines in the dark night of medieval obscurity.

Today, things have changed. According to [Ernst] Bloch, the heliocentric system – just like the geocentric – is based upon presuppositions that can't be empirically demonstrated. Among

Introduction

these, an important role is played by the affirmation of the existence of an absolute space; that's an opinion that, in any event, has been cancelled by the Theory of Relativity. Bloch writes, in his own words: 'From the moment that, with the abolition of the presupposition of an empty and immobile space, movement is no longer produced towards something, but there's only a relative movement of bodies among themselves, and therefore the measurement of that [movement] depends to a great extent on the choice of a body to serve as a point of reference, in this case is it not merely the complexity of calculations that renders the [geocentric] hypothesis impractical? Then as now, one can suppose the earth to be fixed and the sun as mobile.'²⁰

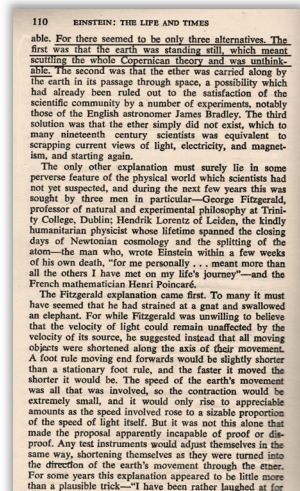
Cardinal Ratzinger courageously recognized one of the theses of geocentric cosmology. Not only does he admit there is no empirical proof for heliocentrism, he realizes the very foundation of modern science permits and promotes the geocentric universe. As the pope discovered when he was a cardinal in 1990, the relative nature of motion precludes any proofs for heliocentrism, since there will always exist a reciprocal motion in the geocentric system.



As we noted earlier, the irony of modern science's quest in the last few hundred years to promote heliocentrism and discredit geocentrism was seen no better than in the efforts of the Master of Relativity, Albert Einstein. Although convinced from his mentors such as Copernicus, Galileo, and Newton that the Earth was moving, he was suddenly faced with the surprising results of one of the world's most famous experiments

– the 1881 and 1887 Michelson-Morley experiments that demonstrated, by all normal indications, that the Earth was motionless in space. As Einstein's biographer put it, after the Michelson-Morley experiment...

"The problem which now faced science was considerable. For there seemed to be only three alternatives. The first was that the Earth was standing still, which meant scuttling the whole Copernican theory and was unthinkable."²¹



Introduction

Following his mentors, Einstein was equally convinced that, because of this upsetting experiment, he had to reinvent physics from the bottom up in order to keep the Earth moving. The reinvention, which he borrowed from fellow physicist Hendrik Lorentz, was to claim that Michelson's experimental equipment shrunk during testing and caused the results to be skewed. The shrinking made it appear as if the Earth was motionless in space and not revolving around the sun. Einstein's 'incredible shrinking machine,' as it should be coined, was also required to shrink time and distance in order to make up for any loss of dimensions caused by the shrinking equipment. Viola! The Special Theory of Relativity was born, a haunted house of mirrors in which nothing would ever appear as it actually exists.

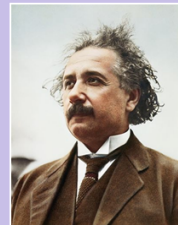
Consequently, Einstein became the world's most famous scientist, yet not because he was more accomplished than his peers, but mainly because the men of science who had sweated through twenty-five excruciating years of having no answer to the earth-shattering results of Michelson's experiment and were thus on the very precipice of having to admit the Catholic Church was right in condemning all the so-called proofs for heliocentrism, were saved from this embarrassing fate by Albert Einstein. The Jewish author Abraham Pais uses this fact and turns Einstein into a demigod that saved mankind. Pais writes:

A new man appears abruptly, the 'suddenly famous Doctor Einstein.' He carries the message of a new order in the universe. He is a new Moses come down from the mountain to bring the law and a new Joshua controlling the motion of heavenly bodies....The new man who appears at that time represents order and power. He becomes the θεῖος ἄνθρωπος, the divine man, of the twentieth century."²²

Unfortunately, the Catholic Church has never been the same since. But all was not lost. As Moses was forbidden to go to the Promised Land because he struck the rock twice instead of once (Num 20:11-12), so Einstein was forbidden to ever again deny geocentrism when he struck the Physics rock twice, his next swipe being his invention of the General Theory of Relativity in 1915 to make up for the inadequacies of the Special Theory he invented in 1905. In doing so, all his effort to keep the Earth moving by means of the Special Theory became undone by his General Theory. We might say, by God's doing, Einstein was hoist by his own petard. Whereas the Special Theory could

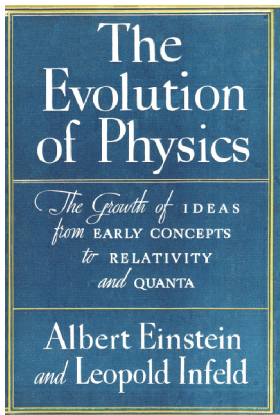
Subtle is the Lord

**The Science and the
Life of Albert Einstein**



Introduction

keep the Earth moving but with the cost of having to introduce a relative motion between the sun and the Earth, the General Theory took relative motion to the next level, to the bounds of the universe, and forced Einstein to admit that a rotating universe around a fixed Earth was just as viable as a rotating Earth in a fixed universe. In effect, whereas the Special Theory introduced a relative motion between the sun and the Earth, the General Theory introduced the relative motion between the Earth and the universe, and, irony of ironies, geocentrism could find its most ardent supporter in Albert Einstein. By 1938 Einstein admitted the following:

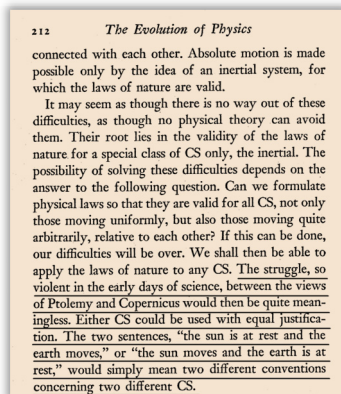


Since the time of Copernicus we have known that the Earth rotates on its axis and moves around the sun. Even this simple idea, so clear to everyone, was not left untouched by the advance of science....The struggle, so violent in the early days of science, between the views of Ptolemy and Copernicus would then be quite meaningless. Either coordinate system could be used with equal justification. The two sentences: "the sun is at rest and the Earth moves," or "the sun moves and the Earth is at rest," would simply mean two different conventions

concerning two different coordinate systems.²³

As to how the General Theory brought us right back to the ancients who viewed the turning sky of stars each night as caused by the rotation of the universe around a stationary Earth, Einstein can't help but agree. His theory demands it, both geometrically and dynamically:

We need not necessarily trace the existence of these centrifugal forces back to an absolute movement of K' [Earth]; we can instead just as well trace them back to the rotational movement of the distant ponderable masses [stars] in relation to K' [Earth] whereby we treat K' [Earth] as 'at rest.'...On the other hand, the following important argument speaks for the relativistic perspective. The centrifugal force that works on a body under given conditions is determined



Introduction

by precisely the same natural constants as the action of a gravitational field on the same body (i.e., its mass), in such a way that we have no means to differentiate a 'centrifugal field' from a gravitational field....This quite substantiates the view that we may regard the rotating system K' [Earth] as at rest and the centrifugal field as a gravitational field....The kinematic equivalence of two coordinate systems, namely, is not restricted to the case in which the two systems, K [the universe] and K' [the Earth] are in uniform relative translational motion. The equivalence exists just as well from the kinematic standpoint when for example the two systems rotate relative to one another.²⁴

With this background, we are now ready to investigate the details of the Church's dealing with Galileo and the heliocentric system of Copernicus.

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"There is no planetary observation by which we on Earth can prove that the Earth is moving in an orbit around the sun. Thus all Galileo's discoveries with the telescope can be accommodated to the system invented by Tycho Brahe just before Galileo began his observations of the heavens. In this Tychonic system, the planets...move in orbits around the sun, while the sun moves in an orbit around the Earth in a year. Furthermore, the daily rotation of the heavens is communicated to the sun and planets, so that the Earth itself neither rotates nor revolves in an orbit.

Physicist, I Bernard Cohen²⁵

"We know now that the difference between a heliocentric and a geocentric theory is one of motions only, and that such a difference has no physical significance," [the Ptolemaic and Copernican views], "when improved by adding terms involving the square and higher powers of the eccentricities of the planetary orbits, are physically equivalent to one another."

Astronomer, Fred Hoyle²⁶

Chapter 1

The Church Confronts Copernican Cosmology

1500-1600: Rheticus and Copernicus



In the 1540s, a scientist named **Georg Joachim Rheticus** (a friend of Copernicus', but also a homosexual who eventually severed ties with Copernicus after having been double-crossed by him) was pushing heliocentrism with even more vigor than Copernicus. Rheticus' verve came from his own heliocentric convictions, which he had published in 1541, two years before Copernicus published *De revolutionibus*. In it Rheticus attacks what he senses is the prime battle ground of the controversy, assuring his readers that we should see "very clearly...that the motion of the earth does not contradict the Holy Scriptures."²⁷ He adds:

From all this it is plain that it cannot be proved from the sacred writings that the earth is immobile. Therefore, he who assumes its mobility in order to provide a reliable calculation of times and motions is not acting against Holy Scripture."²⁸

Rheticus is so sure of himself that he concludes:

since...the motion of the earth may be considered as demonstrated truth, we need not fear that more balanced and learned judges will ascribe the marks of impiety to us."²⁹

For **Pope Paul III**, having the historical distinction of forming the Congregation of the Roman Inquisition in 1542 for the precise purpose of defending the Catholic Church from heresy,³⁰ the time was growing ripe for a confrontation with those who were teaching that Scripture need not be interpreted literally when it addressed issues of cosmology. The very next year, 1543, Paul III would be presented with Copernicus' new book on heliocentrism.



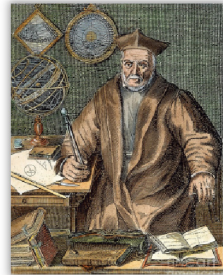
Whereas Copernicus showed at least some reluctance to publish his final work, Rheticus greased the wheels by alerting Andreas Osiander, a Lutheran printer, to Copernicus' doubt. Osiander convinced Copernicus to

allow him to write an introductory statement for the book that presented it as a “hypothesis” rather than as a fact. Copernicus agreed and his book, *De revolutionibus*, was printed by Osiander the year Copernicus died, 1543. Osiander had also printed many other non-Catholic works, many of which the Inquisition eventually censured, and this added a flavor of animosity to the issue that only religious disputes can generate.

Bartolomeo Spina, the Master of the Sacred Palace from 1542 until his death in 1547, sought to have Copernicus’ book banned, which was eventually carried out by his Dominican colleague Giovanimaria Tolosani, who died two years later in 1549. Obviously, Osiander’s disclaimer on Copernicus’ book did not persuade these particular censors. A few years prior, Tolosani wrote a detailed geocentric treatise in 1546, which he dedicated to Paul III and which included an endorsement from Spina. In it Tolosani vehemently rejected Copernicus’ universe and declared it an extreme danger to the faith precisely because of its attempt to deliteralize Sacred Scripture.³¹

As the 16th century reached the midway point, the staunchest anti-Copernican of the day was the Jesuit **Christoph Clavius** (d. 1612). He writes in his highly esteemed work:

We conclude, then, in accordance with the common doctrine of the astronomers and the philosophers, that the earth lacks any local motion, either rectilinear or circular, and that the heavens themselves revolve continually round it.... Holy Scripture is also in favor of this doctrine, stating in a great number of places that the earth is stationary. It also bears witness to the fact that the sun and the other heavenly bodies are in motion.³²



1566: Pius V's Catechism of the Council of Trent



One of the clearest official and authoritative statements from the Catholic Church defending the doctrine of geocentrism comes from the catechism issued under a decree of Pope Pius V, known as *The Catechism of the Council of Trent* or more simply, *The Roman Catechism*. In light of its date, 1566, the Catechism comes as more or less the capstone to the Church’s position, since it had already rejected both Rheticus’ and Copernicus’ books on heliocentrism in the 1540s and put them

both on the Index in 1559. The Roman Catechism was published seven years after the Index.

In its first instance of teaching geocentrism, the Catechism states:



...He also gave to the sun its brilliancy, and to the moon and stars their beauty; and that they might be for signs, and for seasons, and for days and years. He so ordered the celestial bodies in a certain and uniform course, that nothing varies more than their continual revolution, while nothing is more fixed than their variety.³³

Although this wording is somewhat brief, it correctly describes the Church's historical position. It states very clearly that the "sun...the moon and stars" are "celestial bodies" which move with a "certain and uniform course," and does not say that the Earth moves among them. Rather, to expel any doubt about what objects are revolving, the catechism adds that the sun, moon and stars have a "continual revolution." Although the unspecified reference to "revolution" might cause a heliocentrist to infer that the sun's revolution does not necessarily mean it is revolving around the Earth, a few pages later the catechism disallows that inference by stipulating the following:

The Earth also God commanded to stand in the midst of the world, rooted in its own foundation and made the mountains ascend, and the plains descend into the place which he had founded for them....³⁴

Let's examine this a little more closely. Some have advanced the argument that in the above passage the word "Earth" (the Latin: *terram*) could be translated as "dry land," and that "world" (the Latin: *mundus*) could be translated "Earth." This translation portrays a "dry land" distinct from air and water, which was then filled with plants and animals, both of which are situated on the Earth.³⁵ As such, the claim is made that the passage could not be demonstrating an Earth in the center of the universe but merely a dry land placed on the Earth.

But such an interpretation is denied since the Catechism specifies that the *terram* stands in the "midst" or middle of the *mundus*. At creation, dry land was not made to be, or said to be, in the "midst" of the Earth. Genesis 1:9 says it is only to be separated from water. That is, the dry land covered various parts of the surface of the earth, not the midst or middle of the earth.

The translation “the midst of the earth” would refer to the center of the earth, since the “midst” or “middle” of a sphere can only be the center of the sphere. Conversely, the curved surface of the land on the Earth could not possess a “midst” or middle position on the surface. Hence, the only way “midst” can make sense is if the Earth was placed in the middle of a rotating universe. Not surprisingly, this solution fits very well with the Catechism’s statements about the sun and stars which, “by their motions and revolutions,” must revolve around a central point, the “midst” or middle of the universe.

Up to the publishing of the Roman Catechism, we see the following in the Church’s teaching on the universe:

- the sun and stars move. The Church never teaches that the earth moves and, in fact, always says the earth “stands still.”
- the sun and stars move in continual revolution. The only “revolution” that science and the Church knew and taught was the stars and sun revolving around the earth.
- Nicolas Oresme suggested the earth might be rotating, but diurnal rotation was rejected by the Church in 1541, 1548 and placed on the Index in 1559, and as we will see later, was also condemned both in 1616 and 1633.
- Nicholas of Cusa said the earth could be moving but not necessarily by rotating or revolution, but this was also rejected in 1541, 1548 and placed on the Index in 1559, as well as condemned both in 1616 and 1633.
- the Tridentine catechism entertained no alternate scientific theory when it supported geocentrism. It made no statement considering heliocentrism as an alternative, much less accepted it as viable. It made no mention of acentrism, or any other view. It gave no credence to Oresme, Cusa, Aristarchus, Pythagorus or any view that said the earth moved.
- the Tridentine catechism knew that the Catholic tradition believed the earth did not move and it makes no statement that indicates a break with the Church’s tradition, including no break against the consensus of the Church Fathers on geocentrism.

One of the more significant facts regarding the Roman Catechism's dogmatic assertion of geocentrism is that it remained unchanged in all its subsequent editions, including the last Latin version in 1907 and the 1914 edition published in Turin, which, incidentally, was just three years before the Fatima visions of 1917 showing the sun moving in the sky. Obviously, no editor saw fit to remove the geocentric teaching from the catechetical regimen of Catholic doctrine.

Also highly significant is that the Roman Catechism makes a point of not only reiterating the dogmatic decrees from the Council of Trent, but its stated purpose was to “examine every statement in the Catechism from the viewpoint of doctrine,”³⁶ which requires us to conclude that among the statements subjected to the prescribed analysis were its geocentric catechetical teachings. This is a clear indication that Pius V understood geocentrism as Catholic doctrine.

In 1610, Galileo published his now famous *Siderius nuncius* (“Starry Messenger”), which was the first time he had made public his allegiance to Copernicanism. Prior to 1610, Galileo kept totally silent about his heliocentric views and even taught the geocentric system in public. Perhaps what prompted him to take the chance of publicizing his private views in this rather dangerous climate was what Kepler had concluded about the Catholic Church and its official treatment of Copernicus. Kepler notes: “All the popes since 1542...have interpreted Scripture in such a way that none of them have so far accused Copernicus of error or of heresy.”³⁷



38

By 1613 things became even more heated, as the Grand Duke of Tuscany, Cosimo II (Medici), and his mother the Grand Duchess, Christina of Lorraine (the grand daughter of Catherine Medici, queen of

France), got into the picture.³⁹ On December 12 of that year, a friend of Galileo's, Benedetto Castelli, attended a luncheon with the Grand Duke and his mother. Prompted by a whispering in her ear from Cosimo Boscaglia (professor of philosophy at Pisa), the Duchess asked Castelli if a moving Earth was contrary to Scripture. One thing led to another and by the end of the evening Castelli had secured an assertion from Boscaglia that heliocentrism was true.

Taking advantage of this development from people in high places, Galileo saw this as an opportunity to add Scripture to his evidence and thus wrote a long letter to Castelli on the subject. He asserted that Scripture had no intention of teaching about the order and motions of the celestial bodies. Galileo also made the claim that the literal reading of Joshua 10:10-14 (which states that Joshua stopped both the sun and the moon in the noon sky for one whole day) was in conformity to heliocentrism.⁴⁰

But here is the straw that broke the camel's back. Once Galileo added Scripture to his heliocentric arguments, it became a whole different issue. It was here that the tide began to turn against him. A year later on December 21, 1614, **Tommaso Caccini** preached against Galileo in Florence at the church of Santa Maria Novella.



The next year, 1615, Galileo is now 50, perhaps old enough for him to contemplate sparring with the Catholic hierarchy over what appears to be his lifelong dream. But he receives a letter from **Federico Cesi** on January 12, 1615 telling him not to respond to Caccini due to the fact that Cardinal Bellarmine was resolute against supporting Copernicanism from Scripture. Cesi writes:

As for the opinion of Copernicus, Bellarmine himself, who is the head of the congregation on these issues, has told me that it is heretical, and that the motion of the Earth is, without any doubt, contrary to Scripture.⁴¹

But three months later, on March 7, 1615, Galileo received a letter from Monsignor Dini that portrays Bellarmine as a bit more accommodating:

In respect to Copernicus the Cardinal said that he could not believe that he would be prohibited; rather he believes that the worst thing that could happen to Copernicus would be that some

marginal notes might be added to the effect that his doctrine was introduced to save the appearances, or some such thing, similar to those who have introduced epicycles but do not believe in them.⁴²

The difference between the two letters is understandable. Although Cardinal Bellarmine was willing to accommodate Galileo by allowing the Copernican theory as an appearance-saving model, still, he maintained strict prohibitions on it because he considered heliocentrism scientifically erroneous and theologically heretical. In that respect, Bellarmine was quite adamant with Monsignor Dini that a passage such as Psalm 19:5-6⁴³ meant that the sun revolved around the Earth and not vice-versa.

Galileo retorted with a lengthy letter to Dini on March 23, 1615 denying Bellarmine's claims, although with a large amount of deference to the Church as the final arbiter. Galileo insists that when Copernicus wrote his book he recognized that if the Ptolemaic system failed and could not be true to the appearances, then the Copernican system "would have acquired a much greater degree of truth and reality...the knowledge of the true arrangement of the parts of the world."⁴⁴ Galileo then added: "Thus in regard to Copernicus it is my opinion that the mobility of the earth and the stability of the sun are not open to compromise..."⁴⁵

On several occasions in the letter, however, Galileo voluntarily submits his opinion to the judgment of the Church:

I now wish with the same zeal to offer them next at the feet of the Highest Pastor and to the infallible determination of the Holy Church.... My only intention is...to be obedient to the wishes of my superiors, and to submit all my work to their decision...I am inferior to all and place myself below all wise men."⁴⁶

Regardless of his humble demeanor, that Galileo openly admitted he believed that Copernicus gave us the "true arrangement of the parts of the world," it was now time for the Church to step in and put the brakes on what appeared to be a runaway train.

1615: The Church Confronts Fr. Paolo Antonio Foscarini

In 1615, Bellarmine had made up his mind that Copernicanism was to be rejected. This verdict was decided in the case of the Carmelite friar, Fr. **Paolo Antonio Foscarini**. The Inquisition's censor determined that Foscarini's 1615 work defending heliocentric cosmology, *Lettera sopra l'opinione de'Pittagorici e del Copernico*, was erroneous. The text of the censor's words are very intriguing, since they give us a unique look into

the hermeneutical philosophy that was the foundation of the Church's judgments:

This treatise excessively favors the rash opinion of the motion of the earth and the immobility of the sun, as is clear on pages 8 to 11. On page 9 the author not only refutes but also ridicules many things which are taught by the authors of the opposite opinion. On page 13 he openly says, 'the indicated opinion has a clear probability.' But what is clearly contrary to Sacred Scripture obviously cannot be probable.



But his reconciliation contorts the Sacred Scriptures, and explains them contrary to the common explication of the Holy Fathers, which agrees with the more common, indeed the most common, and most true opinion of almost all astronomers.

Foscarini sought to defend his views in a 4000-word reply to the censor. His main argument was one that was common during that day. For some reason the very scholars that could barely see craters on the moon were absolutely certain that, as Foscarini put it, "the earth moves...an opinion which has been confirmed by weighty arguments by many of the most learned astronomers of our day."⁴⁷ Consequently, it is no surprise that Foscarini subsequently argues that that heliocentrism...

...agrees most fittingly with the Scriptures according to the methods and arguments used by the Holy Fathers, if one follows exactly the rules of the Holy Fathers and scholastic theologians which they themselves used most frequently in interpreting the Scriptures.

We see the same sort of reasoning still today. The objector begins from the position of being convinced that science has proven the Earth moves. Once this scientific premise is established, he has no choice but to assert the corollary point – that it is not necessary to interpret Scripture literally.

If he then follows his argument to its logical conclusion, he must then insist that the Fathers of the Church had agreed on using a non-literal hermeneutic. Hence, Foscarini will cite Fathers who interpreted various

passages in a non-literal way in the hopes of using them as a basis or analogy for all the patristic writers and all the biblical passages dealing with cosmology. The facts are these, however:

- no one, especially in Foscarini's day, had proven the Earth was in motion. Accordingly, we are not surprised that Foscarini cites no specific "astronomer" of his day who possessed such proof. As modern science itself has discovered, every phenomenon occurring in the heavens, be it eclipses, parallax, aberration, centrifugal force, *etc.*, can be explained just as well from the perspective of a non-moving Earth and a rotating universe.
- all the Church Fathers were geocentrists. There was not one who advocated a heliocentric view, even though these same Fathers were aware that the Greeks from the Pythagorean school were advocating heliocentrism.

Hence, if Foscarini's claim was true, namely, that we must "follow exactly the rules of the Holy Fathers...which they themselves used most frequently in interpreting the Scriptures," we should just as easily be able to conclude that their "exact rules" led them to interpret Scripture as teaching geocentrism, since they were all geocentrists, with no exceptions.

Basically, Foscarini sought to employ the same argument we hear so often today against putting trust in Scripture to teach us true facts about the cosmos. Foscarini merely shifts this argument and places it against the Holy Fathers, arguing that they can only be trusted when they speak in unison on matters of the Christian faith, not on cosmological information they glean from Scripture.

In light of Foscarini's arguments, when long ago Solomon said, "there is nothing new under the sun," we now know why. Five hundred years after Foscarini the same arguments are still being voiced today for heliocentrism, only in more detailed and sophisticated ways. Today it is claimed that:

- the Bible speaks with neither literalness nor authority on such mundane issues;
- the Fathers made erroneous conclusions in their consensus on biblical cosmology; and
- various scientific "proofs" show the Earth is moving.

Where today a sophisticated telescope might detect a distant star with planets circling around it, in Foscarini's day the telescope was pointed

toward Jupiter wherein one could watch its moons circling the Jovian planet. Both then and now the revolutions of the smaller around the larger would be used as “proof” that the Earth, because it is smaller than the sun, is required to revolve around it, and never vice-versa.

Likewise, it was argued that if the sun itself rotates (since we can see black spots circling its circumference), analogously the Earth should also rotate. Galileo had also argued that, because the sunspots changed the angle of their path according to an annual cycle and not a daily one, only the heliocentric system could answer this phenomenon.

But as it is today, so it was then. There is *popular science*, and then there is *real science*. Modern science has shown that Foscarini’s arguments provide no proof for a moving Earth. In fact, it can be safely said that one of the only true facts of science is that science has no proof that the Earth moves.

Unfortunately, however, if in spite this factual evidence a person is convinced that science has proven the Earth moves, there is little that can persuade him otherwise. Neither Scripture, nor the patristic consensus, nor the magisterium will trump what one believes is a fact of science, and the modern science community has made certain that the public believes that heliocentrism is a fact.

As it turned out, none of Foscarini’s arguments impressed either the censors or **Cardinal Bellarmine**. They could easily see that these men were driven to disregard the patristic consensus and confine Scripture to spiritual matters because they were all under the mistaken notion that science had proven the Earth moved.

But Bellarmine knew that the burden of proof was on the challengers, not the Church, and a huge burden it was. No one had produced any proof of heliocentrism and thus Bellarmine wouldn’t even consider, much less accommodate, any softening of his views on either Scripture or the patristics.

On April 12, 1615, Bellarmine wrote a personal letter to Fr. Foscarini answering his claims in three short rebuttals, the original written in Italian.

To the Very Reverend Father Paolo Antonio Foscarini,
Provincial of the Carmelite Order of the Province of Calabria:

My Very Reverend Father,

I was pleased to read the letter in Italian and the treatise in Latin which Your Reverence sent to me. I thank you for both of them, which indeed are quite full of ingenuity and learning. And since



you have asked for my reactions, I will state them very briefly, for you now have little time to read and I have little time to write.

Firstly, I say that it appears to me that Your Reverence and Sig. Galileo have acted prudently in being satisfied with speaking in terms of assumptions and not absolutely, as I have always believed Copernicus also spoke.⁴⁸ For to say that the assumption that the earth moves and the sun stands still saves all the appearances better than do eccentrics and epicycles is to speak well, and contains nothing dangerous. But to wish to assert that the sun is really located in the center of the world and revolves only on itself without moving from east to west, and that the earth is located in the third heaven and revolves with great speed around the sun, is a very dangerous thing, not only because it irritates all the philosophers and scholastic theologians, but also because it is damaging to the Holy Faith by making the Holy Scriptures false.⁴⁹ Although Your Reverence has clearly exhibited the many ways of interpreting the Holy Scriptures, still you have not applied them to particular cases,⁵⁰ and without doubt you would have encountered the very greatest difficulties if you had tried to interpret all the passages which you yourself have cited.

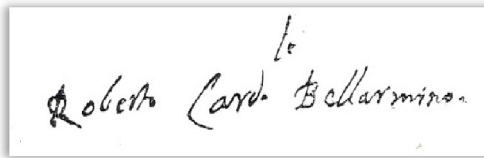
Second, I say that, as you know, the Council [of Trent] has prohibited interpretation of Scripture contrary to the common agreement of the Holy Fathers.⁵¹ And if Your Reverence will read not only the Holy Fathers but also the modern commentaries on Genesis, the Psalms, Ecclesiastes, and Joshua, you will find that they all agree on the literal interpretation that the sun is in heaven and rotates around the earth with great speed, and that the earth is very far from the heavens and stands immobile in the center of the world.⁵² Ask yourself then how could the Church, in its prudence, support an interpretation of Scripture which is contrary to all the Holy Fathers and to all the Greek and Latin commentators. Nor can one reply that this is not a matter of faith, because even if it is not a matter of faith because of the subject matter [ex parte objecti], it is still a matter of faith because of the speaker [ex parte dicentis].⁵³ Thus anyone who would say that Abraham did not have two sons and Jacob twelve would be just as much of a heretic as someone who would say that Christ was not born of a virgin, for the Holy

Spirit has said both of these things through the mouths of the Prophets and the Apostles.

Thirdly I say that whenever a true demonstration would be produced⁵⁴ that the sun stands in the center of the world and the earth in the third heaven, and that the sun does not rotate around the earth but the earth around the sun, then at that time it would be necessary to proceed with great caution in interpreting the Scriptures which seem to be contrary,⁵⁵ and it would be better to say that we do not understand them than to say that what has been demonstrated is false. But I will not believe that there is such a demonstration, until it is shown to me.⁵⁶

To demonstrate that the assumption that the sun is located in the center and the earth in the heavens saves the appearances is not the same thing as to demonstrate that in truth the sun is located in the center and the earth in the heavens. The first demonstration, I believe, can be given; but I have the greatest doubts about the second. And in case of doubt one should not abandon the Sacred Scriptures as interpreted by the Holy Fathers.⁵⁷ Let me add that the words, ‘The sun rises and sets, and returns to its place...’ were written by Solomon, who not only spoke as inspired by God, but who also was a man more wise and learned than all others in the human sciences and in the knowledge of created things, and all this wisdom he had from God.⁵⁸ Thus it is not likely that he would assert something which was contrary to demonstrated truth or to what could be demonstrated.⁵⁹ You might tell me that Solomon spoke according to appearances, since it appears to us that the sun revolves* when the earth turns, just as it appears to one on a ship who departs from the shore that the shore departs from the ship. To this I respond that, although to him who departs from the shore it does seem that the shore departs from him, nevertheless he knows that this is an error and he corrects it,⁶⁰ seeing clearly that the ship moves and not the shore. But in respect to the sun and the earth, there has never been any wise person who felt a need to correct such an error, because one clearly experiences that the earth stands still, and the eye is not mistaken when it judges that the sun moves, just as it is not mistaken when it judges that the moon and the stars move.⁶¹

And this is enough for now. With cordial greetings, Reverend Father, and I pray for every blessing from God.⁶² Signed, Roberto Cardinal Bellarmine.



As was his usual style, Bellarmine answered Foscarini with the same erudition that made him famous in other ecclesiastical and scholarly matters. This was not an answer that tried to stall or placate the objector. It was very straightforward and resolute. Simply put, Foscarini posed an alternate scenario to what had been believed up to that time and Bellarmine resolutely told him that it had no merit and was to be rejected. He offered no compromise. Indeed, there could be none, for there were only two possibilities: either the Earth moves or it does not move. Bellarmine saw no convincing arguments that would force the Church to conclude that it had been wrong for fifteen centuries about the Earth's position in space.



Ernan McMullin, a Galileo scholar who believes in heliocentrism, nevertheless, rightly notes:

Did Bellarmine think that a demonstration might conceivably be found? It seems altogether unlikely that he did. Nor was his concession an evidence of open-mindedness with regard to this issue; it was evidence only of the innate courtesy for which Bellarmine was famous. He went on in the remainder of the letter to list several reasons

why such a proof would not be forthcoming. Mathematical astronomy, the genre to which he thought Copernicus's constructions to belong, was inherently incapable of producing such a proof; the best it could do was to save the appearances....This had been Bellarmine's view when teaching astronomy long before in Louvain....He had not changed his mind in the years since....If Bellarmine, solicitous for the reputation of the Church as he was, had believed that there was the slightest possibility that the Copernican ordering of sun and earth might later prove correct, he would never have allowed the decree of 1616 to go through.⁶³

Annibale Fantoli, another Galileo scholar, sees it the same way:



As we know, Bellarmine in his response to Foscarini had faced the possibility, although with a considerable and basic skepticism, that a proof for Copernicanism might be given. But by signing, as he did, the ecclesiastical decisions of February-March 1616, he had himself by now come to preclude completely that possibility, however tenuous it might be. And, I repeat, the other Churchmen were also precluding it. Therefore, to hold that the provisions of 1616 were only intended to break the untimely zeal of Galileo for Copernicanism without blocking further careful scientific research on the matter appears to me to be completely untenable.⁶⁴

In his letter to Foscarini, Bellarmine assures him that he is well aware of the “many ways of interpreting the Holy Scriptures,” but he implores Foscarini to become equally aware that no one can arbitrarily decide when a less than literal interpretation can be applied. Bellarmine reiterates over and over again in his letter that the all-important decision on when and where it is permissible to apply a non-literal interpretation to Scripture has been left to more divinely qualified and authoritative minds than Foscarini’s. In effect, Bellarmine informs Foscarini that the decision on the meaning and intent of Scripture has already been made. The die is cast and cannot be changed.

Bellarmino appeals to the witness of Solomon as his foundation, a man both inspired by the Holy Spirit and given the supernatural gift of wisdom and knowledge above all others. Although Bellarmine agrees that on certain occasions it was more convenient for various writers of Scripture to speak in the language of appearance and thus we should interpret their words accordingly, there are many cases in which this hermeneutic cannot be applied.

Surely Solomon, whose writings are permeated with a scientific analysis of life, would not suddenly become unscientific when he was describing the cosmos. Similarly, the Fathers, who read both the heliocentric arguments from the Pythagorean school as well as the geocentric arguments from the Aristotelian school and thus had the option of interpreting Scripture’s cosmological passages either phenomenally or realistically, chose the latter, without equivocation or debate amongst themselves.

From Moses, through Solomon, to the Holy Fathers, and even to the magisterium of the Church, Bellarmine informs Foscarini “there has never been any wise person who felt the need to correct such an error.” The burden of proof, then, rested solely on the objector to the literal hermeneutic, and what a tremendous burden it was.

Bellarmino advances these kinds of arguments because they were formulated earlier in his work, *De controversiis*, the treatise in which he outlined the principles of Scripture interpretation that were to guide the Church through the Protestant revolt and beyond:

Scripture is the immediately revealed word of God, and was written as dictated by God.... Thus we say that the sacred writers had immediate revelation and wrote the words of God himself either because new things previously unknown were revealed to them by God...or because God immediately inspired and moved them to write things which they had seen or heard, and guided them lest they err in any way...

There can be no error in Scripture, whether it deals with faith or with morals, or whether it states something general and common to the whole Church or something particular and pertaining to only one person.

In the Scriptures not only the opinions expressed but each and every word pertains to the faith. For we believe that not one word in Scripture is useless or not used correctly.⁶⁵

In Scripture there are many things which of themselves do not pertain to the faith, that is, which were not written because it is necessary to believe them. But it is necessary to believe them because they were written, as is evident in all the histories of the Old Testament, in the many histories in the Gospel and in the Acts of the Apostles, in the greetings of Paul in his Epistles, and in other such things.⁶⁶

We notice also that Bellarmine’s argument to Foscarini does not center around whether it might be theoretically possible to interpret the geocentric passages of Scripture phenomenally. Bellarmine fully concedes that, in the art of hermeneutics, a non-literal or “as it appears” interpretation of a biblical passage is fully within the realm of theoretical possibility. Instead, Bellarmine’s argument centers on whether we have the divine directive to do so. The answer to that question is an unequivocal no. This is precisely why Bellarmine can put himself on the line, as it were,

and declare that there is no scientific proof for heliocentrism: Five hundred years of scientific endeavor following Bellarmine's bold declaration has shown him to be absolutely correct, for no scientist has ever proven that the Earth moves. Indeed, many experiments show the Earth is standing still in space.

Last but not least, Bellarmine assures Foscarini that the matter of whether the sun revolves around the Earth is certainly a "matter of faith." As Galileo Scholar Ernest McMullin notes:

But now a new note was struck, one that would doom one of Galileo's main lines of defense. It might *seem* as though the sun's motion and the earth's rest were not matters of faith, he wrote. But they were because of the speaker – that is, because the text of the Bible as a whole had God as its primary author. Thus every passage with a clear literal intent (and Bellarmine always assumed that the earth/sun passages displayed such an intent) had the same status: it was a matter of faith. To challenge it would be, implicitly, to challenge the divine authorship of Scripture, and that was *explicitly* a matter of faith: it would be as "heretical to say that Abraham did not have two children" as to say that "Christ was not born of a virgin."⁶⁷

As for Foscarini, since he had already published his book, it could not be corrected; and thus the Church's only choice was to condemn it, and it did so on March 5, 1616.⁶⁸ Foscarini died just three months later on June 10, 1616.

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"This 'null' result [of the 1887 Michelson-Morley experiment] was one of the great puzzles of physics at the end of the nineteenth century. One possibility was that... v would be zero and no fringe shift would be expected. But this implies that the earth is somehow a preferred object; only with respect to the earth would the speed of light be c as predicted by Maxwell's equations. This is tantamount to assuming that the earth is the central body of the universe."

Physicist, Douglas C. Giancoli⁶⁹

Chapter 2

The Fathers, the Medievals and Scripture

The Consensus of the Fathers

In the April 12, 1615 letter that Cardinal Bellarmine wrote to Fr. Paolo Antonio Foscarini, Bellarmine states:

Consider now, with your sense of prudence, whether the Church can tolerate giving Scripture a meaning contrary to the Holy Fathers and to all the Greek and Latin commentators.

Cardinal Bellarmine was referring to the **Council of Trent's** decree regarding the authority of the consensus of the Fathers of the Church on the interpretation of Scripture. It stated:

Furthermore, in order to restrain petulant spirits, It decrees, that no one, relying on his own skill, shall, in matters of faith, and of morals pertaining to the edification of Christian doctrine, wresting the sacred Scripture to his own senses, presume to interpret the said sacred Scripture contrary to that sense which holy mother Church, whose it is to judge of the true sense and interpretation of the holy Scriptures, hath held and doth hold; or even contrary to the unanimous consent of the Fathers.⁷⁰



Chapter 2: The Consensus of the Fathers and Medieval Theologians

The teaching of the supreme authority of the consensus of the Fathers of the Church was reiterated in the same infallible form by **Vatican Council I** in 1870. It stated the following:

But, since the rules which the holy Synod of Trent salutarily decreed concerning the interpretation of Divine Scripture in order to restrain impetuous minds, are wrongly explained by certain men, We, renewing the same decree, declare this to be its intention: that, in matters of faith and morals pertaining to the instruction of Christian Doctrine, that must be considered as the true sense of Sacred Scripture which Holy Mother Church has held and holds, whose office it is to judge concerning the true understanding and interpretation of the Sacred Scriptures; and, for that reason, no one is permitted to interpret Sacred Scripture itself contrary to this sense, or even contrary to the unanimous agreement of the Fathers.⁷¹

In 1965, Vatican Council II stated:

...the words and deeds which God has revealed, and which have been set down in Sacred Scripture and explained by the Fathers and by the magisterium. (*Ad Gentes*, Ch. 3, 22)⁷²

Salient Points of the Church Fathers' Consensus:

- The Fathers never say the Earth moves.
- The Fathers always say the Earth is at rest at the center of the universe.
- The Fathers never say the sun is the center of the universe.
- The Fathers never say the sun does not move around the Earth, even in their scientific analysis of the cosmos.
- The Fathers always say the Earth is the center of the universe.
- The Fathers always say the sun moves in the same way as the moon moves.
- The Fathers recognize that some of the Greeks held that the Earth revolves and rotates, but they do not accept either of those teachings.
- The Fathers accept the Chaldean, Egyptian and Greek teaching that the Earth is at the center of the universe and does not move.
- The Fathers hold that the Earth was created first, by itself, and only afterward the sun, moon and stars. The only deviation from

this is St. Augustine who, in one of his views, held that all the heavenly bodies were created at the same time.

- The Fathers hold that light was created after the Earth, but this light preceded the light of the sun and stars.

Various Quote from the Fathers on Geocentrism

Ambrose: “But the sun himself has many things in common with the stars, for he travels across the heavens...”⁷³

Athanasius: “For the Sun is carried round along with, and is contained in, the whole heaven, and can never go beyond his own orbit, while the moon and other stars testify to the assistance given them by the Sun...But the earth is not supported upon itself, but is set upon the realm of the waters, while this again is kept in its place, being bound fast at the center of the universe.”⁷⁴

Athenagoras: “To Him is for us to know who stretched out and vaulted the heavens, and fixed the earth in its place like a center.”⁷⁵

Augustine: “...while the whole earth is suspended on nothing. For perhaps the world keeps its central place by the same law that attracts to its center all heavy bodies.”⁷⁶

“For who else save Moses smote the Egyptians with so many and mighty plagues....Who else save Joshua the son of Nun divided the stream of the Jordan for the people to pass over, and by the utterance of a prayer to God bridled and stopped the revolving sun?”⁷⁷



“Since, then, the day is finished by the motion of the sun, and by his circuit from east to east, I ask, whether the motion itself is the day, or the period in which that motion is completed, or both? ...the sun must go round four-and-twenty times to complete a day.... so much time should pass as the sun is accustomed to accomplish his whole course in from morning to morning....Let no man then tell me that the motions of the heavenly bodies are times, because, when at the prayer of one the sun stood still in order that he might achieve his victorious battle, the sun stood still, but time went on. For in such space of time as was sufficient was that battle fought and ended.”⁷⁸

Chapter 2: The Consensus of the Fathers and Medieval Theologians

Basil: "...that the earth occupies the center of the universe...Do not then be surprised that the world never falls: it occupies the center of the universe, its natural place. By necessity it is obliged to remain in its place..."⁷⁹



"In the midst of the covering and veil, where the priests were allowed to enter, was situated the altar of incense, the symbol of the earth placed in the middle of this universe; and from it came the fumes of incense."⁸⁰

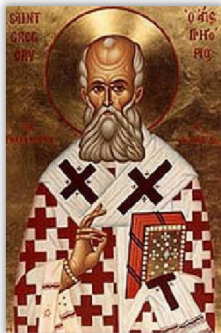


Chrysostom: "Because they are unsteady and giddy, they think that the Earth turns round with them, which yet turns not, but stands firm. The derangement is of their own state, not from any affection of the element."⁸¹

"But, on the other hand, the sun with the rest of the stars, runs on his course through every day. And again, the earth is fixed..."⁸²

Clement of Rome: "The sun and moon, with the companies of the stars, roll on in harmony according to His command, within their prescribed limits, and without any deviation."⁸³

Clement of Rome: "the Creator...who has fixed the great world as a center in space, who has spread out the heavens and solidified the earth."⁸⁴



Cyril of Jerusalem: "The earth, which bears the same proportion to the heaven as the center to the whole circumference of a wheel..."⁸⁵

Gregory Nazianzus: "And we are taught in the Gospel of a third earthquake, namely, from this Earth to that which cannot be shaken or moved."⁸⁶



Gregory of Nyssa: "This is the book of the generation of heaven and earth," saith the

Chapter 2: The Consensus of the Fathers and Medieval Theologians

Scripture...the earth and the water, holding each other in, took the middle place of the universe....for neither is the earth shifted from its own base, nor does the heaven ever relax in its vehemence, or slacken its motion.”⁸⁷

“And how does earth below form the foundation of the whole, and what is it that keeps it firmly in its place?”⁸⁸

“...the vault of heaven prolongs itself so uninterruptedly that it encircles all things with itself, and that the earth and its surroundings are poised in the middle, and that the motion of all the revolving bodies is round this fixed and solid center...”⁸⁹

Gregory Thaumaturgos: “And the life of men weareth away, as day by day, and in the periods of hours and years, and the determinate courses of the sun, some are ever coming, and others passing away....that the earth itself continues stable; that the sun accomplishes its circuit about it perfectly, and rolls round to the same mark again...”⁹⁰

Irenaeus: “The sun also, who runs through his orbit in twelve months, and then returns to the same point in the circle.”⁹¹

Jerome: “The moon may dispute over her eclipses and ceaseless toil, and ask why she must traverse every month the yearly orbit of the sun. The sun may complain and want to know what he has done that he travels more slowly than the moon.”⁹²

John Damascene: “For it is night when the sun is under the earth, and the duration of night is the course of the sun under the earth from its rising till its setting.”⁹³

Justin Martyr: “The former, after he had been named Jesus (Joshua), and after he had received strength from His Spirit, caused the sun to stand still.”⁹⁴

“And again, when the land was given up to you with so great a display of power, that you witnessed the sun stand still in the heavens by the order of that man whose name was Jesus (Joshua), and not go down for thirty-six hours, as well as all the other miracles which were wrought for you as time served...”⁹⁵

Mathetes: “...the sun has received the measure of his daily course to be observed, whom the moon obeys, being commanded to shine in the night, and whom the stars also obey, following the moon in her course...”⁹⁶

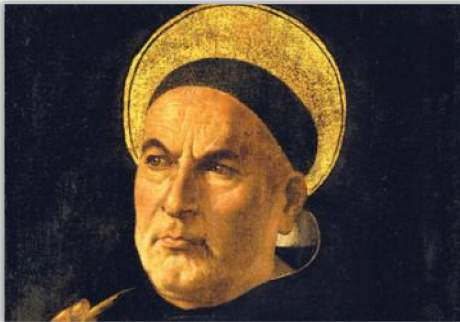
Methodius: “And, of a truth, it seemed worth while to inquire also about the sun, what is the manner of his being set in the heaven; also what is the orbit he traverses; also whither it is that, after a short time, he retires; and why it is that even he does not go out of his proper course: but he, too, as one may say, is observing a commandment of a higher power...”⁹⁷

Minucius Felix: “Look also on the year, how it is made by the circuit of the sun; and look on the month, how the moon drives it around in her increase, her decline, and decay.”⁹⁸

Tertullian: “Think we that Joshua the son of Nun, when warring down the Amorites...The sun “stood” in Gibeon, and the moon in Ajalon; the sun and the moon “stood in station until the People was avenged of his enemies, and the sun stood in the mid heaven.” When, moreover, (the sun) did draw toward his setting and the end of the one day, there was no such day beforetime and in the latest time.”⁹⁹

Examples of Medieval Theologians

Alphonsus Ligouri (d 1787): “Let us observe the sun, which with great speed goes around the Earth, and without ever varying its course.” (*Verità della Fede*, Cap III, 548, Latin: “Osserviamo il sole, che con velocissimo moto gira la terra, e senza mai variare il suo corso divide deversamente...”)



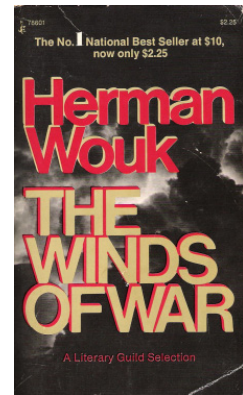
Aquinas: “The Earth stands in relation to the heaven as the center of a circle to its circumference. But as one center may have many circumferences, so, though there is but one Earth, there may be many heavens.”¹⁰⁰

Reply to Objection #7: “The words ‘one day’ are used when day is first instituted, to denote that one day is made up of twenty-four hours. Hence, by mentioning ‘one,’ the measure of one natural day is fixed. Another reason may be to signify that a day is completed by the return of the sun to the point from which it commenced its course.”¹⁰¹

Scripture's Testimony on Geocentrism

As Cardinal Bellarmine insisted to Fr. Foscarini that Scripture must be regarded with supreme authority and must be interpreted as literally as the Church has consistently done in her tradition with every other doctrine she extracted from Scripture, nevertheless, Fr. Foscarini laid the seeds of a school of thought which contested this tradition. Although the tradition of the literal interpretation of Scripture had built the foundation for the Church's practice of Christianity (for example, in her seven sacraments, Baptism (John 3:5); Confession (John 20:23); the Eucharist (Matt 26:26); Confirmation (Acts 19); Holy Orders (John 20:23; Acts 1:20; 1 Tim 5:14); Marriage (Matt 19:1-9); Sacrament of the Sick (James 5:14) and other doctrines: the papacy (Matt 16:18-19), tradition (2Thess 2:15), creation (Genesis 1-2); heaven (2Peter 3:10-13); hell (Mark 9:43-49); Original Sin (Rom 5:12-14); mortal sin (1John 5:15), celibacy (1Cor 7:1-10); and many others, attempts to remove Scripture's testimony about the cosmos to the non-literal category became the chink in the armor at which the forces of the world would hammer away for the next four hundred years. Once the chink was penetrated, it was as if the sword of Damocles had come down and given it a mortal blow.

In contemporary literature this state of affairs was perhaps best described by the character "Sloat" in Herman Wouk's 1971 book, *The Winds of War*, who responds to Natalie's question about how Western civilization has declined. Sloat answers her with a series of examples, the first of which is, "Such as, my dear, that Christianity is dead and rotting since Galileo cut its throat."¹⁰²



Harvard historian **I. Bernard Cohen** gives us the secular world's view of the inevitable clash that would occur between Copernicanism and Scripture. He writes:



One necessary consequence of his system was the position that the literal interpretation of Scripture cannot be the ultimate test for scientific explanation of the observed phenomenon of the world of nature around us. Like it or not, *De Revolutionibus* could not avoid constituting a challenge to authority....Whether or not Copernicus was actually a major figure in this revolutionary tilt of knowledge away from authority, he

has come to symbolize the first mover in this direction of science and it is an honorable role....In arguing for the ‘reality’ of his own system, and in not going along with those for whom ‘reality’ was not a central question, Copernicus was certainly a rebel. It is even reasonable to call him a revolutionary.¹⁰³

Someone once said, “Scripture is not a science book.” Although there is a certain degree of truth in that statement, unfortunately it has been badly misrepresented in arguments dealing with the Galileo affair. It has been used to politely take Scripture out of the jury room on whether Galileo’s hypothesis was correct. Advocates of the heliocentric theory often make a glib reference to a certain Cardinal Baronius who in 1598 is said to have made the following summation of the supposed dichotomy between science and Scripture: “The Holy Spirit tells us how to get to heaven, not how the heavens go.”¹⁰⁴ Various strains of this sentiment have been used throughout the last few centuries to silence theologians who seek to extract various truths from Scripture with which to build an understanding of the universe.



For example, Catholic author **George Sim Johnston** writes:

Galileo accepted the inerrancy of Scripture; but he was also mindful of Cardinal Baronius’s quip that the bible “is intended to teach us how to go to heaven, not how the heavens go.” And he pointed out correctly that both St. Augustine and St. Thomas Aquinas taught that the sacred writers in no way meant to teach a system of astronomy. St. Augustine wrote that: ‘One does not read in the Gospel that the Lord said: I will send you the Paraclete who will teach you about the course of the sun and moon. For He willed to make them Christians, not mathematicians.’

Unfortunately, there are still today biblical fundamentalists, both Protestant and Catholic, who do not understand this simple point: the bible is not a scientific treatise. When Christ said that the mustard seed was the smallest of seeds (and it is about the size of a speck of dust), he was not laying down a principle of botany. In fact, botanists tell us that there are smaller seeds. He was simply talking to the men of his time in their own language, and with reference to their own experience.¹⁰⁵

Chapter 2: The Consensus of the Fathers and Medieval Theologians

Was Baronius, and now Johnston, correct? First, let us address Johnston's point about the mustard seed. His claim that the mustard seed upsets the inerrancy of Scripture simply fails to contextualize. Jesus was referring to the known seeds of the land of Palestine, for in that region the mustard seed was, indeed, the smallest seed. On the larger point of whether Scripture can speak authoritatively on what we categorize as "scientific issues," first, we must keep in mind that Scripture does not testify to any such separate intellectual categories and thus does not grade the truth of its statements depending on the category it is addressing. The category of "scientific issues" is imposed on Scripture but Scripture recognizes no such distinction.

Second, although Scripture certainly does not reach the academic level of a typical science textbook, that does not mean it cannot, or does not, address and decide on what we understand as a "scientific issue" on various occasions. The difference is subtle, but it is very important. For example, we can all agree that the *Declaration of Independence* and the *United States Constitution* are not religious documents. Most categorize them as political documents. But every American will agree that when either of the two documents address a matter of religion,



such as when the *Declaration of Independence* says: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness," everyone acknowledges that the *Declaration* is giving factual and authoritative statements about religion that forms the basis of the country's foundation of government. The *Declaration* is certainly not a religious treatise, but it is, nevertheless, addressing an important area of religion in this particular instance, and it holds the same authority in that instance as it does when it speaks about political and governmental issues.

In the same way, although Scripture is not a science book and thus does not employ formulas such as $E = mc^2$ or $F = ma$, nevertheless, when it touches upon an area that we humans categorize as "science," it is giving factual and authoritative statements that form the basis of our view of the world. Discovering the scientific formulas that coincide with those foundational biblical truths has been assigned to man's labor under the six days God has given him to work by the sweat of his brow, and as such, man's science can safely complement divine revelation. Revelation does not seek to impinge upon man's freedoms and intellectual pursuits, but only to save him from the heartache and frustration of proceeding down

the wrong scientific path, especially in areas regarding the creation of the world that no human being was present to witness, or with the structure of the cosmos from which no man has a high enough platform to determine which bodies are moving and which are not.

As **Pope St. Pius X** once wrote:



Human science gains greatly from revelation, for the latter opens out new horizons and makes known sooner other truths of the natural order, and because it opens the true road to investigation and keeps it safe from errors of application and of method. Thus does the lighthouse show many things they otherwise would not see, while it points out the rocks on which the vessel would suffer shipwreck.¹⁰⁶

Or as Gregory of Nazianzus once put it:

We, however, who extend the accuracy of the Spirit to the merest jot and tittle, will never admit the impious assertion that even the smallest matters were dealt with haphazardly by those who have recorded them.¹⁰⁷

Accordingly, God drops knowledge down from heaven to guide man in the paths of truth about the cosmos. It is only when we ignore this revelation that we soon go off into the myriad of conflicting theories man has concocted since the time of Copernicus, and which are unfortunately being added to the unhealthy diet of modern science on a daily basis.



In light of these principles, Johnston's appeal to **St. Augustine's** statement: "I will send you the Paraclete who will teach you about the course of the sun and moon. For He willed to make them Christians, not mathematicians,"¹⁰⁸ actually speaks more against Johnston's case than for it. We notice first that Augustine reaffirms that the sun and the moon move, not the Earth. Obviously, Augustine does not intend to go against all the statements he made in his other works affirming the Earth's motionlessness and the sun's movement.

Second, Augustine's concern regards only that the Lord did not intend to teach **how** the sun and moon move in their courses, not that the Lord did not intend to teach that the sun and

moon move. That is, the Lord did not desire to give us detailed information as to what pushes or pulls the sun and moon around the Earth, or how it is that they keep such precise time year after year. But we can certainly conclude from the Lord's teaching that the sun and moon move. Christians don't have to become "mathematicians" in order to know the simple fact that the celestial bodies revolve around the Earth. A child could understand it. Mathematics is necessary only when one wants to calculate such things as how fast the sun and moon accomplish their appointed tasks or how far away they are from Earth. Hence, because the Lord taught them in Scripture that the sun and moon move around the Earth, it was for that very reason that St. Augustine and St. Thomas were both geocentrists, in opposition to the Greeks and Indians who were promoting heliocentrism, respectively.

Johnston's attempt to commandeer Augustine to support heliocentrism is common among Catholic authors who are seeking some way to counter the magisterium's condemnation of Copernican cosmology and Galileo's support of it in the 1600s. All these attempts, of course, are done in face of the fact that Augustine believed firmly in geocentrism and defended it vigorously. Ignoring these facts, heliocentric advocates will often appeal to Augustine's general hermeneutical principles concerning the need to be cautious when science and Scripture seem to clash, or they will take Augustine's comments out of context and make it appear as if he is saying one thing when, in fact, he is saying quite another.

For example, Galileo historian, Annibale Fantoli, in his 1997 book *Galileo: For Copernicanism and for the Church*, introduces an argument from Galileo that makes it appear as if Augustine had no commitment or interest in geocentrism and would much prefer dealing with matters of salvation. Fantoli writes:

But, comments Galileo, the mobility or stability of the Earth or of the Sun are not questions of faith or morals, and as to those who uphold the mobility of the Earth none of them has ever wished to abuse the sacred texts by making use of them to bolster his own opinion. And the opinion of the Council, Galileo adds, is in agreement with the attitude of the Fathers who considered it useless to try to solve the problems of nature, as seems to in the case of St. Augustine who, when confronted with the question as to whether the heavens are fixed or move, answered (*De Genesi ad Litteram*, L.2, c.10): To them I answer that these things should be examined with very subtle and demanding arguments to determine truly whether or not it is so; but I do not have the time to undertake and pursue these investigations, nor should such time be available to those whom

we desire to instruct for their salvation and for the needs and benefit of the Holy Church.¹⁰⁹

What Fantoli misses is that, in context, **Augustine** is not talking about whether the sun revolves around the Earth, or vice-versa. Augustine is concerned only with the question of whether the firmament itself revolves around the Earth or if the stars revolve around the Earth while the firmament remains fixed.

Suffice it to say, the attempt by Galileo and his advocates today to commandeer Augustine to their cause is a typical example of how the great saint's words are often twisted to teach Copernicanism when, in fact, Augustine is teaching the exact opposite. Unfortunately, Augustine's respect of science is often an easy target for abuse by those seeking to boost the ideas of modern science (*e.g.*, evolution and heliocentrism).

In the process, little attention is paid to Augustine's devotion to Scripture as the final authority on such matters, nor are his warnings heeded against the false claims of science. For example, one hardly ever sees this revealing quote from Augustine. He writes:

But since the words of Scripture that I have treated are explained in so many senses, critics full of worldly learning should restrain themselves from attacking as ignorant and uncultured these utterances that have been made to nourish all devout souls....But more dangerous is the error of certain weak brethren who faint away when they hear these irreligious critics learnedly and eloquently discoursing on the theories of astronomy or on any of the questions relating to the elements of this universe. With a sigh, they esteem these teachers as superior to themselves, looking upon them as great men; and they return with disdain to the books which were written for the good of their souls; and, although they ought to drink from these books with relish, they can scarcely bear to take them up.¹¹⁰

Language of Fact versus Language of Appearance

A common objection that is levied against using Scripture to teach geocentrism is that when Scripture employs language such as "the sun rises" or "the sun sets," it is merely attempting to express the motions of the heavenly bodies in figurative or phenomenal language since a rising or setting of the sun is the view that a person standing on Earth would observe, but it is not the true reality. The astronomer will argue that even though he sees the sun rise over the horizon, he, being a knowledgeable

scientist, knows that in reality it is the Earth rotating on its axis that makes it appear as if the sun is rising.

Likewise, a modern biblical exegete will often point to figurative language employed hundreds of times in Scripture (*e.g.*, Psalm 98:8: “Let the floods clap their hands: let the hills be joyful together”) and insist that the sun’s “rising” is of the same linguistic genre and thus it need not be interpreted literally. The Catholic may even refer to the words of **Pope Leo XIII** in his teaching about the interpretation of Scripture:



The unshrinking defense of the Holy Scripture, however, does not require that we should equally uphold all the opinions which each of the Fathers or the more recent interpreters have put forth in explaining it; for it may be that, in commenting on passages where physical matters occur, they have sometimes expressed the ideas of their own times, and thus made statements which in these days have been abandoned as incorrect.¹¹¹

He may also quote **Pope Pius XII** for the same purpose:



For of the modes of expression which, among ancient peoples, and especially those of the East, human language used to express its thought, none is excluded from the Sacred Books [The Bible], provided the way of speaking adopted in no wise contradicts the holiness and truth of God, as, with his customary wisdom, the Angelic Doctor already observed in these words: ‘In Scripture divine things are presented to us in the manner which is in common use amongst men.’ For as the substantial Word of God became like to men in all things, ‘except sin,’ so the words of God, expressed in human language, are made like to human speech in every respect, except error.¹¹²

Catholic biblical exegetes who seek to counter the geocentric declarations of past popes and cardinals frequently appeal to the above papal statements for support of their position. They will conclude that both Leo XIII and Pius XII taught us that we are to interpret Scripture’s references to the movement between the Earth and sun by the model of heliocentrism advocated by modern science. As far as these exegetes are

concerned, the case is closed, since the popes did not require us to interpret descriptive phrases such as “the sun rises” in a literal fashion, but wanted us to see them as either ancient expressions of uneducated peoples or phenomenal language from the point of view of an observer on the surface of the Earth. In either case, it is assumed that the popes were accepting heliocentrism and denying geocentrism.

Upon closer examination, this conclusion is more an eisegesis of what Leo and Pius actually said than a fair and accurate understanding of their words. First, neither pontiff makes a specific reference to Scripture’s cosmological passages, thus no explicit claims can be advanced that the popes were referring to the movements of either the sun or the Earth. The popes could have been referring to any number of instances in which Scripture speaks in phenomenal language or beliefs common among the Fathers but were not in Scripture, for example, the four humours, the four elements, or spontaneous generation.¹¹³

Second, Scripture’s phenomenal language (e.g., the “sun rises” or the “sun sets”) also applies to the geocentric system. In the geocentric system the sun does not actually “rise” or “set”; rather, the sun revolves around the Earth. When the geocentrist sees a sunset he does not say: “Oh, what a beautiful revolution of the sun,” just as a heliocentrist does not say: “Oh, what a beautiful rotation of the Earth.” The geocentrist and the heliocentrist know that the sun “rises” or “sets” only with respect to the Earth’s horizon, and therefore, reference to a “rising sun” in Scripture is just as phenomenal in the geocentric system as it is in the heliocentric. On that basis alone neither Leo XIII’s nor Pius XII’s above directives can be commandeered to support heliocentrism, especially in light of the fact that three previous pontiffs, based on stricter criteria, denied heliocentrism and endorsed geocentrism, as the historical records show quite clearly.¹¹⁴

Third, Pius XII’s quotation from the words of the “Angelic Doctor,” Thomas Aquinas, namely, “In Scripture divine things are presented to us in the manner which is in common use amongst men,” cannot be interpreted as Pius’ attempt to promote heliocentrism since it is a fact of history that Aquinas was an avowed geocentrist who never entertained the possibility of heliocentrism.¹¹⁵ Obviously, then, Thomas could not have intended his insights on biblical interpretation to be used either to deny geocentrism or promote heliocentrism. These insights were merely his general teaching on the various modes of speech employed by the authors of Scripture, which can be applied to many and varied phenomena in nature and everyday life, but certainly not celestial orbits.

Lastly, although it is safe to say that phrases such as “the sun rises” or “the sun sets” are to be considered phenomenal from both the heliocentric and geocentric perspectives, this does not mean that Scripture *always* limits itself to phenomenal language when it addresses the movement of

the heavenly bodies. The language of appearance only applies to expressions when appearance is the intended feature. One can easily surmise from language such as “the sun rises” or “the sun sets” that although Scripture may express the appearance of the movement from the perspective of the observer on Earth, nevertheless, Scripture confidently affirms the scientific fact that, of the two bodies, one of them moves and the other does not. In that particular scientific category, Scripture is adamant that it is the sun that moves, not the Earth. Hence, it is the sun that is the circling body that causes the *appearance* of the sun rising or setting over the horizon, not the Earth rotating. As we will see, there are many passages of Scripture that are specific concerning the movement of the sun and the immobility of the Earth.

Official Statements from the Catholic Magisterium on the Inerrancy of Sacred Scripture

The Catholic Church, throughout her two-thousand year history, has been very clear and adamant in her teaching that Scripture contains no error when it speaks on theology, history, science, mathematics or any other discipline or factual proposition. Scripture cannot err because God is its main author. Thus Catholic authorities have stated the following:

Pius IX, condemned the following notion: “The prophecies and miracles set forth and recorded in the Sacred Scriptures are the fiction of poets, and the mysteries of the Christian faith the result of philosophical investigations. In the books of the Old and the New Testament there are contained mythical inventions...”¹¹⁶

Pope Leo XIII stated: “It is absolutely wrong and forbidden either to narrow inspiration to certain parts only of Sacred Scripture or to admit that the sacred writer has erred.”¹¹⁷

Pope Pius X, condemned the notion: “Divine inspiration does not extend to all of Sacred Scriptures so that it renders its parts, each and every one, free from every error.”¹¹⁸

Pope Benedict XV stated: “...the divine inspiration extends to all parts of Scripture without distinction, and that no error could occur in the inspired text.”¹¹⁹

Pope Pius XII, repeats Leo XIII decree, **stating**: “It is absolutely wrong and forbidden either to narrow inspiration to certain parts only of Sacred Scripture or to admit that the sacred writer has erred.”¹²⁰

Pope Pius XII, condemns the notion: “...immunity from error extends only to those parts of the Bible that treat of God or of moral and religious matters.”¹²¹

1964 Pontifical Biblical Commission stated: “...that the Gospels were written under the inspiration of the Holy Spirit, who preserved their authors from every error.”

1998 Congregation for the Doctrine of the Faith stated: “...the absence of error in the inspired sacred texts...”¹²²

Pope Leo XIII stated: “For the sacred Scripture is not like other books. Dictated by the Holy Spirit, it contains things of the deepest importance, which, in many instances, are most difficult and obscure....For all the books in their entirety...with all their parts, have been written under the dictation of the Holy Spirit.”¹²³

Council of Trent stated: “...the purity itself of the Gospel is preserved in the Church, which promised before through the Prophets in the Holy Scriptures...and [the Synod] clearly perceiving that this truth and instruction are contained in the written books and in the unwritten traditions, which have been received by the apostles from the mouth of Christ Himself, or from the apostles themselves, at the dictation of the Holy Spirit, have come down even to us, transmitted as it were from hand to hand, [the Synod] following the examples of the orthodox Fathers, receives and holds in veneration with an equal affection of piety and reverence all the books both of the Old and of the New Testament, since one God is the author or both, and also the traditions themselves, those that appertain both to faith and to morals, as having been dictated either by Christ's own word of mouth, or by the Holy Spirit, and preserved in the Catholic Church by a continuous succession”.”¹²⁴

1994 Catechism of the Catholic Church stated: “Sacred Scripture is the speech of God as it is put down in writing under the breath of the Holy Spirit.” “God inspired the human authors of the sacred books...it was as true authors that they consigned to writing whatever he wanted written, and no more.”¹²⁵

Pope Leo XIII stated: “It is futile to argue that the Holy Spirit took human beings as his instruments in writing, implying that some error could slip in...For by his supernatural power he so stimulated and moved them to write, and so assisted them while they were writing, that they properly conceived in their mind, wished to write down faithfully, and expressed aptly with infallible truth all those things, and only those things, which He himself ordered; otherwise He could not Himself be the author of the whole of Sacred Scripture.”¹²⁶

Code of Canon Law (1983) stated: “Even after ordination to the priesthood, clerics are to pursue sacred studies and are to strive after that solid doctrine founded in sacred scripture, handed on by their predecessors, and commonly accepted by the Church, as set out especially in the documents of councils and of the Roman Pontiffs. They are to avoid profane novelties and pseudo-science.”¹²⁷

As to how we must interpret Scripture, the same popes stated the following:

Pope Leo XIII stated: “provided that he [the exegete] carefully observes the rule so wisely laid down by St. Augustine – not to depart from the literal and obvious sense, except only where reason makes it untenable or necessity requires” (1893, *Providentissimus Deus*, no. 15).

The Pontifical Biblical Commission, 1909, stated: “whether, in particular, we may call in question the literal and historical meaning when there is a question of facts narrated in these chapters” [Genesis 1-3]? Answer: in the negative (under Pope Pius X, 326).

Pope Benedict XV, stated: “In the first place, then, we must study the literal or historical meaning. [...] Jerome then goes on to say that all interpretation rests on the literal sense, and that we are not to think that there is no literal sense merely because a thing is said metaphorically, for ‘the history itself is often presented in metaphorical dress and described figuratively’” (*Spiritus Paraclitus*, nos. 50-51; Jerome, in Hab 3:14).

Pope Pius XII, stated: “Let them, therefore, by means of their knowledge of languages research with all diligence the literal meaning of the words...” (*Divino Afflante Spiritu*, no. 23). “Wherefore the exegete, just as he must search out and expound the literal meaning of the words ...” (*ibid.*, no. 26). “Let them scrupulously refrain from proposing as the genuine meaning of Sacred Scripture other figurative senses...” (*ibid.*, no. 27).

Pope Pius XII, condemned the idea that “the literal sense of Holy Scripture and its explanation, carefully worked out under the Church's vigilance by so many great exegetes, should now yield to a new exegesis, which they are pleased to call symbolic or spiritual. By means of this new exegesis the Old Testament, which today in the Church is a sealed book, would finally be thrown open to all the faithful. By this method, they say, all difficulties vanish, difficulties which hinder only those who adhere to the literal meaning of the Scriptures” (1950, *Humani Generis*, no. 23).

Scriptural Passages Teaching Geocentrism

Joshua 10:10-14



¹⁰And the Lord threw them into a panic before Israel, who slew them with a great slaughter at Gibeon, and chased them by the way of the ascent of Bethhoron, and smote them as far as Azekah and Makkedah.

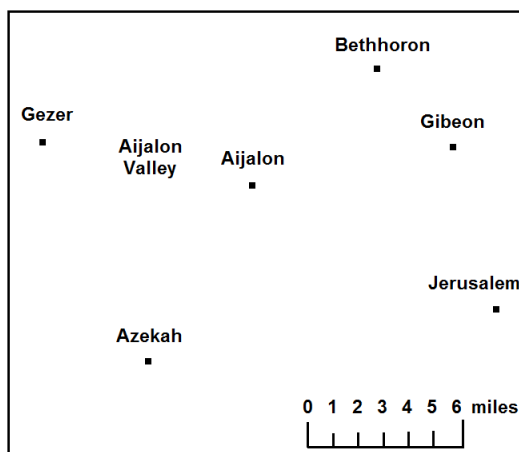
¹¹And as they fled before Israel, while they were going down the ascent of Bethhoron, the Lord threw down great stones from heaven upon them as far as Azekah, and they died; there were more who died because of the hailstones than the men of Israel killed with the sword.

¹²Then spoke Joshua to the Lord in the day when the Lord gave the Amorites over to the men of Israel; and he said in the sight of Israel, "Sun, stand thou still at Gibeon, and thou Moon in the valley of Aijalon."

¹³And the sun stood still, and the moon stayed, until the nation took vengeance on their enemies. Is this not written in the Book of Jashar? The sun stayed in the midst of heaven, and did not hasten to go down for about a whole day.

¹⁴There has been no day like it before or since, when the Lord hearkened to the voice of a man; for the Lord fought for Israel.

One of the more important features of this passage is the involvement of the Lord in being the cause of the celestial and atmospheric events, as well as the disposition and eventual slaughter of Israel's enemies. The Lord does three things: (a) he puts the enemies into a panic (vr. 10); (b) he throws down great hailstones (vr. 11); (c) he causes the sun and moon to stand still (vrs. 12-14). As such, divine intervention predominates the passage and thus we must begin the analysis from the fact that we are in the realm of miraculous events far removed from natural occurrences. Once divine intervention is accepted as an integral part of the passage, it is only a matter of deciding how God accomplished the three miracles.



According to the account in Js 10:6-12, it was at Gibeon that Joshua was standing when he made his request to God to stop the sun. The sun was most likely directly overhead, probably near noontime position. This

fits the description in Js 10:13 that “the sun stayed in the *midst* of heaven.”¹²⁸ Joshua also sees the moon, but it is to the west of the sun. Perhaps Joshua made the request to God at midday because after fighting the Amorites from the early morning, he could see by the early afternoon he was not going to have enough time to finish the battle by sundown, especially since he was fighting five different armies. Joshua 10:5 states: Then the five kings of the Amorites, the king of Jerusalem, the king of Hebron, the king of Jarmuth, the king of Lachish, and the king of Eglon, gathered their forces, and went up with all their armies and encamped against Gibeon, and made war against it.

Another possibility is that since Gibeon is situated at an elevation of between 2400 and 3000 feet above sea level, the sun, which had been rising from the east, is now positioned directly over the heads of Joshua and his army who are looking downward, WSW, upon the enemy armies. This provides Joshua with a very formidable weapon that is still used often in warfare – the glare of the sun. With the sun directly in their eyes as they look upward ENE toward Joshua’s armies, the enemy armies would be severally disadvantaged as they had to deal with partial blindness. Having the sun remain in this position for several hours would be to Joshua’s distinct advantage, and thus he calls to God.

As he makes the request for the sun to stand still and sees it answered, Joshua determines that the moon has stopped over the Aijalon Valley. This valley begins about 15 miles west of Gibeon and extends westward another 15 miles through Gezer until the shore of the Mediterranean. Joshua is in Gibeon which is located in the Judean mountain range. If at Gibeon Joshua is elevated about 2500 feet, he will be able to see westward about 58 miles before the Earth’s curvature limits his line of vision.¹²⁹ In order to be above the Aijalon Valley in Joshua’s line of vision, the moon would be just about 10-30 degrees above the horizon. In fact, the higher Joshua’s elevation at Gibeon, the lower in the sky the moon must be in order to be above the Aijalon Valley. If Joshua is seeing the moon about 30 or so degrees above the horizon, then the moon is about 60 degrees from the sun, and the sun is at the 90 degree mark, “in the midst of the sky.” At this angle, the moon would not be in full phase, but between the 3rd quarter and full phase, but closer to the former. In the 3rd quarter, the moon is in the middle sky as the sun rises, and it sets in the west when the sun reaches the middle sky. Hence, since Joshua can still see the moon while the sun is in the middle of the sky, the moon’s phase must be just prior to the 3rd quarter. All in all, the account conforms with astronomical facts concerning the occupation of the sun and moon in the midday sky.

Additionally, the passage’s veracity is also demonstrated in that it fulfills the required testimony of the Hebrew legal code, *i.e.*, “two or three witnesses.”¹³⁰ Among the witness are “The Book of Jashar” and the

Hebrew Bible. The Book of Jashar is cited because it will serve to stem any doubts about the account's authenticity, since the passage itself admits that the stopping of the sun and moon is one of the most fantastic events ever to occur in the history of mankind. To at least affirm that a second party recorded such an occurrence, anyone familiar at that time with the Book of Jasher could consult the text to authenticate the testimony of the Hebrew Bible. Whether the Book of Jashar exists today is still in debate,¹³¹ but the fact remains that the Hebrew writer puts his testimony of the miraculous event on the line, as it were, allowing it to be checked and verified by any independent party who sought an affirming witness. The *Book of Jashar* is itself authenticated since it is cited in other books of the Hebrew Bible, and thus the veracity of the reference to Jashar in the book of Joshua is affirmed.¹³²

To round out a possible "third witness" to the event, the Hebrew Bible reiterates the account of the cessation of celestial movement in Habakkuk 3:11: "The sun and moon stood still in their habitation at the light of thine arrows as they sped, at the flash of thy glittering spear." Habakkuk reflects the detail of the Joshua passage in that it mentions both the sun and the moon ceasing their movements. The book of Habakkuk was written in the 7th century B.C. while Joshua was written in the 11th century, thus showing how the tradition survived intact over at least four centuries. Additionally, the event is also recorded in Ecclesiasticus (Sirach) 46:4: "Was not the sun held back by his hand? And did not one day become as long as two?" This Old Testament book was written just prior to the Maccabean revolt, circa 160 B.C., which makes the testimony of Joshua's Long Day endure at least through a millennium.

Exegetical Details of Joshua 10:10-14

Similar to a few other accounts in the Old Testament, celestial bodies are incorporated into accounts of war in one form or another. The closest to Joshua is Judges 5:20: "From heaven fought the stars, from their courses they fought against Sisera." From the metaphorical wording embedded in the passages, some scholars have concluded that Js 10:10-14 is merely a fictional account of a typical battle in the annals of Israeli history. In their view, the account is merely an embellished story that attributes a decisive victory to the Hebrew God but in reality it was a normally fought battle that lasted at least two days. These scholarly conclusions, of course, discount any divine intrusion taking place in the narrative, which is their academic goal when interpreting such miracle-laden passages. The difficulty for these scholars, however, is that the miraculous intrusion is woven so inextricably within the details of the passage that it is impossible to separate them without destroying the history of the narrative itself. After

the “Quest for the Historical Jesus” was undertaken by liberal scholars in the last few centuries, theological academia became quite aware of the fact that arbitrarily separating the miraculous from the historical results in destroying both. This has been the Achilles heel of most of liberal and modernistic scholarship when examining passages such as Joshua 10:10-14.

There are other interpreters who, although recognizing the validity of miracles, seek to minimize the possibility that such events occurred in Joshua 10, usually out of fear of criticism from modern academia. In such cases, appeal is often made to the Hebrew word דָּמָם (*damam*) that appears in reference to the sun: “And the sun *stood still*.” Since *damam* also means “silent,”¹³³ these interpreters posit that Joshua is not saying the sun was moving and then stopped; rather, “silent” is merely a poetic way of describing Israel’s victory over the Amorites using celestial metaphors, as if the sun was hushed with amazement.

But escape from the literal application is not so easy. Although in many cases “silent” is the preferred translation of *damam*, in actuality, *damam* is chosen because it always ceases the action of the entity in view. For example, if a person is talking, *damam* is used to denote that he has ceased talking, and therefore he is “silent” (e.g., Ps 31:17: “let the wicked be put to shame, let them *be silent* in Sheol”). If an object is moving, *damam* is used to denote that it has stopped its motion (e.g., 1Sm 14:9: “Wait until we come to you, then we will *stand still* in our place, and we will not go up to them”). Whatever the normal activity of the entity in view, *damam* is employed when that activity comes to an end. Hence, if the salient feature of the sun is its movement in the sky so that it can give light upon the land (which function will eventually terminate if the sun moves beyond the immediate locale), *damam* would be the proper word to use if the sun’s movement ceased.

Although after Joshua the word *damam* is not used again in the Hebrew Bible in connection with a heavenly body, it is used with other objects whose chief function is movement. In Jr 47:6, for example, *damam* is used to represent the cessation of a sword’s activity: “Ah, sword of the Lord! How long till you are quiet? Put yourself into your scabbard, rest and *be still*!” We know that the salient feature of the sun in Joshua 10:13 is its movement across the sky to give light (as opposed to its heat), for the simple fact that it is coupled with the movement of the moon: “And the sun stood still, and the moon stayed.” Hence, the use of *damam* in the case of the sun can only apply to a cessation of its movement, otherwise, it could not be compared to the moon. Moreover, although in the moon’s cessation of movement the word chosen is עָמַד (*amad*),¹³⁴ in the latter part of Js 10:13 *amad* appears again to describe the sun’s cessation of movement: “The sun stayed (*amad*) in the midst of heaven.” Thus, the

sun's cessation of movement is reinforced by two similar yet distinct Hebrew words, *damam* and *amad*.

Additionally, two different Hebrew tenses are employed. After Joshua's use in *vr.* 12 of *damam* in the Qal imperative commanding the sun and moon to "stand still," in *vr.* 13 the narrator puts *damam* in the Qal imperfect tense to denote the sun did, indeed, heed the command. Normally, the imperfect tense is a future tense, but because it is introduced here with a *waw*-consecutive it acts like a past tense, thus *vr.* 13's translation, "stood still." Also in *vr.* 13, the narrator then changes verbs and tenses to describe the moon's cessation of movement, using *amad* in the perfect tense, which is the Hebrew past tense.

Lastly, in *vr.* 14, the *Book of Jasher* is cited and now *amad* is applied to the sun in the Qal imperfect *waw*-consecutive. The upshot of all these grammatical nuances is that these Hebrew verbs and their alternating tenses show conclusively that the account is interwoven as a cause-effect sequence of events that actually took place as recorded. Poetry is never put in such a format.

Some claim that *vr.* 13's wording, "The sun stayed in the midst of heaven, and did not hasten to go down for about a whole day," shows by the words "go down" that the passage is using phenomenological language since, in the geocentric system the sun doesn't actually go down, rather, it circles the Earth and the sun only appears as if it is going down against the Earth's horizon.¹³⁵ This argument is falsified by the fact that the original Hebrew does not use the word "down," but only "go."¹³⁶

Once divine intrusion is accepted as the basis for the account, another issue for consideration is whether the sun itself was stopped (which necessitates that it was previously in motion) or the Earth was stopped in rotation (which necessitates that the sun was not in motion). The most significant piece of evidence in favor of the former interpretation is that even modern heliocentric science (which holds that the Earth rotates on an axis and revolves around the sun), agrees that the moon moves in space. It revolves around the Earth every 28 days or so. That being the case, if behind the actual meaning of Joshua 10:10-14 were the possibility that the Earth was in rotation and thus the passage is attempting to give a phenomenal or 'as it appears' account of the events occurring on that historic day, it would be rather self-defeating for the author to include the cessation of the moon's movement, since both the ancient and modern observer agree that since the moon revolves around the Earth it must be stopped from doing so if it is to be legitimately considered ceasing its movement.

Consequently, since in the normal course of events the moon is in constant motion, yet on this particular day its movement ceased, we are forced to conclude that the cause for the moon's cessation of movement

was not the Earth that stopped spinning but a force that acted upon both the moon and the sun to stop them from continuing their normal revolution around the Earth. So conspicuous is the moon in this account that the reader may assume that the writer deliberately added the moon so as to forestall interpretations of the passage that might seek to eliminate its literal interpretation. The reason is plain: in the heliocentric system, the Earth rotates, and whereas if the Earth stopped rotating it would make it appear as if the sun stood still, the moon would still revolve around the Earth and appear to be continuing to move while the sun remained still, and thus Joshua's request could not be fulfilled by ceasing the Earth's rotation.

The distance from the Earth to the moon is 250,000 miles. Using $2\pi r$ for the circumference of the moon's orbit, the total is 1,570,000 miles the moon travels in 28 days. In one day it travels 56,071 miles, which distance would take it way beyond the valley of Aijalon. In fact, since the Joshua account says that both the sun and the moon could be seen in the sky, this means that the sun and moon were at right angles to one another with the moon being near the extremity of the horizon. That being the case, there is a slim margin of space the moon could occupy in order to remain in the sky if its movement had not been arrested. An extra distance of 56,000 miles would take it beyond the horizon and out of sight.

Once again, since in the geocentric system both the sun and the moon revolve around the Earth, then both the sun and the moon would need to cease their movement simultaneously to satisfy Joshua's request. As noted previously, the heliocentric system, with its claim of a cessation of the Earth's rotation, cannot satisfy Joshua's request, for from Joshua's perspective on the ground the moon would simply move too far in one day to fulfill the specification in the text that it remained over the valley of Aijalon, which at most stretches for only 15 miles until it hits the Mediterranean Sea.

Ecclesiasticus (Sirach) 46:3-5

³Who before him ever stood so firm? For he waged the wars of the Lord. ⁴Was not the sun held back by his hand? And did not one day become as long as two? ⁵He called upon the Most High, the Mighty One, when enemies pressed him on every side.

Here we have another witness to the events which occurred twelve hundred years earlier in the days of Joshua. It confirms that the sun was the moving object that needed to be stopped so that Joshua could complete

his task. It confirms that the potential threat comprised a host of surrounding armies who were seeking to trap the Israelites. (Js 10:5 indicates that five kings, each with their separate army, sought to destroy Israel). Sirach puts the information into a series of rhetorical questions, which is his way of indicating that these events are established historical facts that only a fool would deny.

Habakkuk 3:11

¹¹The sun and moon stood still in their habitation at the light of thine arrows as they sped, at the flash of thy glittering spear.

The outstanding grammatical feature in this passage is the consistent use of Hebrew singulars, even though there are two celestial bodies in view. First, the lack of a conjunctive between “sun” and “moon” acts as a singular; second, the verb “stood still” (which has the same word עמד (*amad*) used in Js 10:12-13) is in the singular; third, “habitation” is also in the singular. The purpose of the singulars is to treat the occurrence as one celestial phenomenon, perhaps because both the sun and moon ceased their motion as the universe at large stopped revolving altogether.

1Chronicles 16:30 and Psalm 93:1-2

¹Tremble before him, all the earth; yea, the world stands firm, never to be moved.

¹The Lord reigns; he is robed in majesty; the Lord is robed, he is girded with strength. Yea, the world is established; it shall never be moved. ²Thy throne is established from of old; thou art from everlasting.

The point of these passages is to portray the Lord’s majesty and strength, as a king who wears his royal robes signifies that he reigns supreme over all the land and has subdued all his enemies. One specific display of the Lord’s power is that he has established the world so that it cannot move. Like the throne of a king that does not move unless by his order, so the world has been set and will not be moved.

Although the comparison between the strength of God and the stability of the world is quite evident in the passage, there are very few

options available regarding the meaning of the “establishment of the world” if one seeks to make a legitimate comparison to God. The world cannot refer to the political machinations of the nations, for they shift quite frequently. It could not refer to the whole universe, since if the universe were moved, to where would it move? The best way the Psalmist’s analogy can have its intended effect is if an object exists that is unmoved in the midst of all other objects that are moving. For example, if the Psalmist were referring to an unmoving Earth, then the image displayed by Ps 93:1 would be most accurate, for the Earth would be the only body at rest in the midst of a sea of moving bodies in the heavens. The Earth would be the only foundation point; the only immovable object, and thus the best example to picture the immutability of God himself. More to the point is that Ps 93:2 adds that God’s throne is also “established.”¹³⁷ Logically, if his throne does not move then the world cannot move. The intended imagery would be identical to passages that call the Earth the “Lord’s footstool,” since footstools are understood to be at rest, not moving.¹³⁸

Some might object that the phrase “shall never be moved” could also be translated as “shall never be shaken.” If that is the case, then one could argue that a “shaking of the world” could have some political overtones. This might be true, except for the fact that the political systems of the world are inherently unstable, and thus they would not make a good comparison in displaying the strength and throne of God. Conversely, the physical world, marked as it is by times and seasons that have been repeating themselves in exact precision for eons, is the only possible “world” that could be compared to the infinite stability of God.

In actuality, if the proper translation were “shaken” rather than “moved,” this would only enhance the imagery of an immobile Earth, for this interpretation would require that the Earth be so firm in its position that it would not only be prohibited from rotating or revolving, but it would also be prohibited from shaking. The Earth is held in space by the whole universe. To move the Earth would require that it overcome the universe. Consequently, we can see why this particular Hebrew word (*mōht*) for “move” or “shaken” was chosen, since it includes the Earth’s resistance to even the slightest outside movement.¹³⁹ If vibration occurs, it will occur within the internal structure of the Earth but not with respect to the Earth’s position in space. In fact, the reason earthquakes occur is that the internal movements within the Earth are rubbing against the external forces that are keeping the Earth immobile in space.

The only other detail of Ps 93:1-2 regards the meaning and usage of the word “world.” As it stands, the Hebrew consistently uses the term in reference to the earth, not the universe at large.¹⁴⁰ Hence, it is the Earth alone that is kept immobile, not the universe.

Psalm 96:9-11

⁹Worship the Lord in holy array; tremble before him, all the earth!

¹⁰Say among the nations, "The Lord reigns! Yea, the world is established, it shall never be moved; he will judge the peoples with equity."

¹¹Let the heavens be glad, and let the earth rejoice; let the sea roar, and all that fills it.

Here again the Hebrew כֹּון *kun* and מֹחַת *mōht* appear in tandem. Although it would be proper to interpret *kun* ("established") and *mōht* ("moved") as words conveying the idea that the Lord's reign over the nations is such that it will be uninterrupted and always produce justice, the unavoidable dimension of this passage is that the Lord's reign is being compared to the already known fact of the world's immovability, and it is the Hebrew poetic form that brings these two dimensions into comparison. Without the poetic form, the passage could have simply stated: "The Lord's reign is established and it shall never be moved, he will judge the people with equity," and the salient point of the Psalmist would have been accomplished. But within the poetic form, the Psalmist is drawing on facts he and other authors have stated elsewhere about the world's establishment and immobility, such as Ps 104:5: "Thou didst set the Earth on its foundations, so that it should never be shaken" or 1Ch 16:30: "tremble before him, all the Earth; yea, the world stands firm, never to be moved." In other words, he is using the scientific fact of the Earth's motionlessness as the basis for the analogy as to why the Lord will always reign and judge with equanimity. Both states will always be true: (1) the Lord will reign with equity, and (2) the world will never move. One verifies and supports the other. If one fails, the other fails also.

We can imagine how difficult it would have been for the Psalmist to prove his point if, indeed, the world was constantly moving through space. If it were a fact that the Earth was moving, the Psalmist would, instead, have had to make a comparison between the stability of the Earth's orbit and the stability of the Lord's reign. In actuality, however, he cannot do so, because previously he had made a comparison between the stability of the Lord's reign and the orbit of the sun (e.g., Ps 19:4-14), and thus it would not be permissible now to compare the Lord's reign to the orbit of the Earth, since obviously both the sun and the Earth cannot be orbiting around each other.¹⁴¹

On a theoretical basis, one might object that since the Psalmist regards the sun as orbiting the Earth he could just have easily regarded the

Earth as orbiting the sun, since both systems are equivalent, geometrically speaking. But although the geometrical reciprocity between the two celestial models is true, the Psalmist is working from a perspective of propositional truth that will only allow him to appeal to the *actual* celestial model and force him to discount its geometric or mathematical reciprocal. That is, since the Psalmist's major point concerns the eternal stability of God's reign, he can only communicate that important truth analogously if he knows which celestial model is actually true, the heliocentric or the geocentric. Any false information will necessarily negate his analogy.

To say it another way, although one could argue that from a relativistic perspective the Psalmist has the option of using the stability of an orbiting Earth as the analog to the Lord's stable reign, the fact remains that he, in the general scope of his Psalmic writings, chooses an immobile Earth (Ps 96:10) and a moving sun (Ps 104:4-6). This choice is significant, since in order to make valid the analogy the Psalmist must base it on an incontrovertible scientific fact. If he chooses the wrong celestial model, his very purpose in creating the analogy is defeated, for the Lord's reign cannot be compared to something fictitious. Either the Earth is fixed and the sun moves around it, or the sun is fixed and the Earth moves around it. Both cannot be true, and the Psalmist must adopt the correct one in order for his analogy to be genuine.

In retrospect, we can see why the Psalmist does not state cosmological truths as mere brute facts. Rather, to make the strongest argument, he purposely compares the immobility of the Earth to the unshakable reign of the Lord, since in serving as witnesses to one another, both must be absolutely true, or, consequently, both are absolutely false. Similar to instances in which God swears to Himself because he can find no one greater to serve as a witness (*cf.* Hb 6:13-18), so here in the Psalms we have the Lord comparing his unflappable divine justice to a divinely-established immovable object.

Some might object that passages such as Ps 82:5 ("They have neither knowledge nor understanding, they walk about in darkness; all the foundations of the earth are shaken") contradict the above conclusion that the Earth does not shake. A careful comparison, however, will show that Ps 82:5 specifies that the "foundations" of the Earth, not the Earth itself, are shaken, while Ps 96:10 says that the *world*, in its totality, will not be shaken or moved.¹⁴² As noted earlier, the "foundations" of the Earth are part of the inner structure of the Earth which lie beneath its surface. The foundations may shake but they will not move the Earth itself out of the position in space God has given it.¹⁴³

Chapter 3

The Church's Case Against Galileo



The Church's case against Galileo was quite strong. The Fathers, the medievals, the Tridentine catechism, the doctors, the saints, the tradition of literal interpretation of Scripture; and the fact that Galileo had no convincing scientific arguments to prove his position, was insurmountable. As Cardinal Joseph Ratzinger (Pope Benedict XVI), quoting the scientific historian Paul Feyerabend, once stated: "At the time of Galileo the Church remained much more faithful to reason than Galileo himself. The process against Galileo was reasonable and just."¹⁴⁴

One can only begin to appreciate the seriousness with which the Church confronted the issue of whether the Earth revolved around the sun if one contemplates the actual number of documents that are catalogued in its archives on the Galileo affair, especially the manner in which these documents carry the official and solemn declarations of the popes and their Congregations of the Holy Office. Recent requisitions of the official records of the Inquisition that are contained in the Vatican archives reveal over 7,900 separate documents, and these are what remain after many had already been destroyed or confiscated. Many of them have never been read once they were put in storage.¹⁴⁵ In addition to the official documents are the unofficial ones, including personal letters back and forth between the major participants in the Galileo affair.

With such tremendous volumes of written material traversing back and forth through Europe, not to mention the unrecorded public or private

Chapter 3 The Church's Case Against Galileo

conversations that occurred on a daily basis, it is no stretch of the imagination to conclude that the Church considered the issue of biblical cosmology one of the most important it had ever faced, perhaps close to the Trinitarian or Christological disputes that occurred in its early centuries, or the matters regarding Salvation during the Protestant revolt. Although each of these doctrinal issues certainly had its own specific concerns, in general they all had one simple and common thread: how do we interpret the words of Scripture; and if there is a dispute, who has the final say on which interpretation is correct?

The matter of biblical interpretation was never made more pertinent than it was in the Galileo affair. Few of the participants got bogged down in theological minutia as they had in the early centuries of Christianity when they attempted to discern how three persons could exist in one God, or why St. Paul said a man was not justified by works (Rm 3:28) but St. James insisted that he was (Jm 2:24). The Galileo case was a simple matter of deciding, out of two equally plausible options of viewing the cosmos, neither of which had been proven scientifically, whether to interpret Scripture literally or figuratively. As we have documented, the Church clearly came down on the side of literal interpretation, and the rest of the Galileo affair is mere detail. Galileo knew this fact quite early in the game. On July 7, 1612, he received a letter from Cardinal Carlo Conti, prefect of the Holy Office, which more or less gave the official view on the matter of Scripture interpretation, specifically concerning whether Aristotelian principles were based on sound scriptural exegesis. Conti admits that neither Scripture nor the Fathers endorse such Aristotelian notions as the incorruptibility of the heavens, but in regard to a moving sun around the Earth, both sources confirmed it as factual. Conti writes:

Because, although those passages stating that the earth is firm and immovable can be understood as signifying the perpetuity of the earth, as Lorini noted in the place already cited, nevertheless, where it says that the sun revolves and the heavens move, the Scripture cannot be interpreted in any sense other than that which corresponds to the popular, common usage... Nevertheless, Diego Stunica says, regarding the ninth chapter of Job, verse 6, says that it is more in conformity to Scripture to have the Earth move, although his interpretation is not commonly followed. This is what it has been possible to discover up to this moment on the subject. But when your eminence [Galileo] desires some further clarification regarding the other Scriptural passages, please let me know and I shall send you a response.

Note that four years before his confrontation with Bellarmine, Galileo got word of the consensus. The significant aspect of Conti's answer is, although the Church was willing to bend a little and say that the scriptural passages concerning the fixity of the Earth might possibly be interpreted as referring to the Earth's steadfast existence in time as opposed to space (as Lorini suggested), still, the passages concerning the movement of the sun and stars around the Earth could not have a meaning beyond what had been traditionally interpreted. Conti's distinction would play itself out both in 1616 and again in 1633, since assertions advocating that the Earth moved were put in the category of "erroneous in faith" while those asserting the sun's immobility were placed in the higher category of "formally heretical."

Bellarmino himself was also very critical of Aristotelian cosmology,¹⁴⁶ but when it came to the case of whether the Earth was fixed and the sun moved, as far as he was concerned Aristotle had little to do with the question of its veracity. In essence, Scripture was the judge of Aristotle, Ptolemy, Copernicus, Galileo and any other aspiring cosmologist. As historian Ernan McMullin notes: "The habitual literalism of the Fathers in their use of the Bible as a source of cosmological knowledge he [Bellarmino] never questioned."¹⁴⁷

On what basis *could* he question it, since the Council of Trent, probably the most dogmatic and incisive set of official documents the Catholic Church has ever produced, had told him quite clearly just fifty years earlier that the Church had the final say on biblical interpretation and she took her marching orders from the consensus of the patristic witness? Bellarmine had already put these principles into practice for Giordano Bruno sixteen years earlier, having been one of the judges at his trial.

As it stands, the Galileo affair was just another tool that allowed the Church to reaffirm the same literal interpretation of Scripture that it had employed in all previous centuries. In that sense, Galileo was a welcome thorn that woke the sleeping giant. All the Church's doctrines (the Trinity, the Incarnation, original sin, transubstantiation, baptismal regeneration, hell, the bodily resurrection, *etc.*) were based on the literal interpretation of Scripture, and almost always in the face of objections from outsiders that it was absurd to interpret Scripture literally. The Church maintained, and the Galileo issue brought it out once again, that except for very obvious instances in which Scripture should be interpreted figuratively, literal interpretation was to reign in all biblical exegesis, just as it had since the beginning of the Church. To depart from it one had to have an irrefutable reason for doing so, and no one either then or now could provide such a reason regarding celestial orbits.

Analysis of Galileo's Letter to Benedetto Castelli

We can obtain an enlightening view of Galileo's treatment of Scripture in his letter to **Benedetto Castelli** of December 21, 1613. He writes:

In regard to the Grand Duchess' first general question, I agree, as you most prudently proposed, conceded, and established, that it is not possible for Sacred Scripture ever to deceive or to err; rather its decrees have absolute and inviolable truth. Only I would have added that, although Scripture itself cannot err, nevertheless some of its interpreters and expositors can sometimes err, and in various ways. The most serious and most frequent of these errors occurs when they wish to maintain always the direct meaning of the words, because from this there results not only various contradictions but even grave and blasphemous heresies.



Although it is certainly possible to create a heresy by literally interpreting Scripture when it should be interpreted non-literally; in reality, few if any heresies have been created by such means. In actuality, the preponderance of Catholic dogmas have been forged by taking the words of Scripture in their “direct meaning,” and many heresies have been created by ignoring the literal interpretation. As noted, the Church would not have recognized the doctrine of baptismal regeneration had it not been decided that the words of Jesus in John 3:5 (“unless a man is born of water and the spirit he cannot enter the kingdom of God”) should be interpreted literally. If the Church had not been guided by the Spirit of God it would have been very easy for her to conclude that John 3:5, and many other passages of Scripture, should be interpreted figuratively, not literally. In fact, the non-literal or symbolic interpretations of John 3:5 (e.g., that water represents spiritual cleansing as opposed to being the actual agent for procuring salvation) are much easier for the average mind to accept and apply. Ostensibly, it seems rather primitive to believe that water carries salvific power, but that is, indeed, the only truth that the Church dogmatized, in spite of ridicule from the world, both then and now. The reason the Church made the decision not to interpret such passages figuratively is that she, by guidance from the Holy Spirit, had long ago made a prior commitment to the literal interpretation of Scripture. Unless there was a sufficient reason not to do so, the literal interpretation ruled all exegesis.

Chapter 3 The Church's Case Against Galileo

In the end, it is the Church who decides when a non-literal interpretation can be applied. This is a very serious matter and it cannot be treated lightly. Inevitably, grave problems will arise when men of no ecclesiastical authority decide for themselves that a certain scriptural passage should be interpreted figuratively against the Church's insistence it be interpreted literally. It is then that heresies are created. When it came time to make a formal and final decision on how to interpret Scripture's cosmological passages, the Church decided, in accord with two thousand years of Hebrew exegesis and fifteen hundred years of Catholic exegesis, that in the case of deciding whether the sun went around the Earth or vice-versa, this was an instance that required literal interpretation. As Feyerabend notes: "The Church, being the foremost guardian and interpreter of the Bible, also made it a boundary condition of reality."¹⁴⁸ These principles were outlined in detail in Bellarmine's dealing with the topic of biblical interpretation in his famous *De controversiis*. In the following paragraph, Bellarmine shows that the Church's insistence on interpreting Scripture's cosmological passages literally is consistent and foundational to how she has interpreted Scripture's other difficult passages that one might be tempted to interpret non-literally:

The words in Matthew 26, "This is my body," Catholics wish to be accepted simply according to the proper meaning of the words, but the followers of Zwingli take them in a metaphorical way. For this reason some have at times fallen into the gravest errors. An example is Origen who erred in this way by accepting figuratively what should have been taken simply, as Jerome teaches in his *Epistula ad Pammachium* concerning the error of John of Jerusalem...

Others have fallen into the contrary error of taking as simple and proper things which ought to be taken figuratively. An example is Papias, and those who followed him, Justinus, Irenaeus, Tertullian, Lactantius, and some others, who thought that what is said in Apocalypse 20, about the New Jerusalem and the thousand years in which the saints will reign with Christ, is to happen here on earth. Their error was condemned by Jerome in the preface to his *In Isaiam*, Book 18, and in *In Ezechielem*, Chapter 36, and by Augustine in his *De civitate Dei*, Book 20, Chapter 7.

We pause here to notice that, unlike many liberal interpreters of Scripture who appeal to the "author's intention" as a rationale for asserting that Scripture could contain propositional errors in its "various types" of

writing (a common belief among those in the Pontifical Academy of Science and other higher echelons of Catholic academia), the 1994 Catechism of the Catholic Church makes absolutely no mention of such a possibility, here or in any other paragraph of its 904 pages. In fact, liberal interpreters who have attempted to turn the Catechism's clause "for the sake of our salvation" (§107) into an assertion that Scripture is only inerrant when it speaks about salvation,¹⁴⁹ should be quite shocked to find that the Catechism makes no mention of such a meaning or intent. In fact, in paragraph 95 the Catechism states the same truth as paragraph 107 concerning the goal of salvation. It describes the outcome of the working together of Tradition, Scripture and the Magisterium: "they all contribute effectively to the salvation of souls."¹⁵⁰ Hence the suggestion that "for the sake of our salvation" means that Scripture's inerrancy is limited to matters of salvation is one of the most erroneous impositions ever foisted on Scripture and the Catholic Church. The correct meaning, as it has been established in every document the Church has ever produced on the issue, is that Scripture was made inerrant precisely because God wanted man to have a flawless source of divine information upon which he can seek and secure his salvation. In actuality, the liberal exegete's continual appeal to the "author's intention" is merely a psychological ploy to implant the idea that the biblical author may not have intended to tell factual truth and thereby left himself room to make historical mistakes. The modernist wants us to believe that the biblical author intended to be less than truthful about the occurrences of an historical event, or that he intended as fiction what actually appears to be an historical narrative.¹⁵¹

For example, one of the arch-modernists of the 20th century, Fr. Raymond Brown, writes: "If one correctly classifies a certain part of the Bible as fiction, one is not destroying the historicity of that section, for it never was history; one is simply recognizing the author's intention in writing that section" (*The New Jerome Biblical Commentary*, p. 1152). Of course, what Brown hasn't determined to anyone's satisfaction is how one "correctly classifies a certain part of the Bible as fiction." The only certain way this could be done is if the Bible itself states that a certain narrative is fictional (*e.g.*, parables). All other attempts at determining fiction in the Bible are totally subjective and without the slightest proof. This issue becomes all the more egregious when exegetes such as Brown and his like-minded colleagues arbitrarily assign passages to the realm of fiction merely because they regard them as too fanciful for modern tastes, such as the story of Jonah and the great fish, the flood of Noah's day, or any number of narratives that exhibit a certain amount of miraculous intrusion. Of course, included in Brown's wish for the "intent" of the biblical author to speak in non-literal ways are those passages that speak about the sun revolving around the Earth and the Earth being motionless in space.

Chapter 3 The Church's Case Against Galileo

But the Catholic Catechism admits to no such “intention” among the biblical authors. It merely states that the sacred author’s intention should be taken into account, and rightly so. Obviously, an exegete would want to know whether the author was speaking in prose or poetry, metaphors or literalism, so that he can adjust his thinking about how the material is being communicated to him. But the Catechism does not, in any manner, that the intention of the author may have been to allow errors of fact in his writing; or that he wanted to be less than truthful concerning what occurred; or that he intended as fiction what is displayed as an actual event. In fact, in not one magisterial document ever produced by the Catholic Church is the “sacred author’s intent” ever stated to include errors, fictions, or fabrications in Scripture’s historical narratives.

The Catechism finishes with the same principle that Bellarmine taught concerning how we are to interpret Scripture within the context of the same Spirit that gave it:

But since Sacred Scripture is inspired, there is another and no less important principle of correct interpretation, without which Scripture would remain a dead letter. Sacred Scripture must be read and interpreted in the light of the same Spirit by whom it was written.¹⁵² Read the Scripture within the living Tradition of the whole Church.¹⁵³ The literal sense is the meaning conveyed by the words of Scripture and discovered by exegesis, following the rules of sound interpretation: All other senses of Sacred Scripture are based on the literal.¹⁵⁴

Galileo continues his letter to Castelli:

Accordingly it would be necessary to attribute to God feet and hands and eyes and even human and bodily feelings like anger, regret, hatred, and even occasional forgetfulness of the past and ignorance of the future. Many propositions are found in the Scriptures which, in respect to the bare meaning of the words, give an impression which is different from the truth, but they are stated in this way in order to be accommodated to the incapacities of the common man. As a result, for those few who deserve to be distinguished from the common people, it is necessary that wise expositors provide the true meanings and indicate the particular reasons why the Scriptures are expressed in such words.

Objectors to the Church’s literal interpretations of biblical cosmology often attempt to dismiss her claims by appealing to the many

anthropomorphisms in Scripture that describe God's being and actions (e.g., Gn 6:8: "eyes of the Lord"; Ex 6:6: "the arm of the Lord"; Dt 9:10 "finger of God"). As the argument goes, if we cannot interpret these kinds of passages literally, we have no obligation to interpret biblical cosmology literally. But the argument is completely fallacious. Early in her history the Church decreed that God does not have human body parts and thus there was no debate on how to interpret such passages. Although it can safely be said that God, being omniscient and omnipresent, sees all our actions and hears all our words, he does not gather this information through human-like eyes or ears, otherwise he would be human. Likewise, even though there are many passages of Scripture in which men hear God speaking to them in their own language (e.g., Mk 1:11: "Thou are my beloved Son; in Thee I am well pleased"), still, the sound waves that hit the human eardrum are not made by a human-like mouth. God makes the sounds in his own mysterious way. Therefore, because Church doctrine has already established that God does not have human body parts, the exegete is required to interpret such passages anthropomorphically.

At the other extreme, however, are instances when the Church insists on a literal interpretation, even when the resulting conclusion cannot be explained by science or does not agree with science. Such is the case with Transubstantiation. The Church insists that certain passages, such as Mt 26:26 ("This is my body") must be interpreted literally, though science insists such phenomena is impossible under ordinary physical laws.

The point to be gleaned from these two opposite poles of biblical exegesis is that interpretation is always subject to the principle known as 'the hierarchy of truths,' that is, a higher or confirmed truth sets the limits on how one can interpret other passages of Scripture that are more vague or ambiguous. As noted above, the higher truths concerning the nature of God prohibit the exegete from interpreting certain passages as teaching that God has human body parts. Similarly, the higher truths given by the Holy Spirit to the Church prohibit the same exegete from interpreting in a non-literal manner passages concerning the eating of Christ's flesh.¹⁵⁵

As it stands, Cardinal Bellarmine explained to Foscarini and Galileo that the Church had long ago determined that Scripture's data concerning the fixity of the Earth and the movement of the sun had to be interpreted literally. From Solomon, to the Church Fathers, to the medieval theologians, and now the magisterium of the Church itself, all agreed that, of the two possible interpretations (literal or figurative), the Scripture must be interpreted literally in these particular cases. According to Bellarmine, there was no scientific proof to the contrary, and there never would be. He was right, since no modern scientist worth his reputation can claim that heliocentrism has been proven.

Interestingly enough, Galileo's appeal to Scripture's anthropomorphisms as the rationale to interpret Scripture's cosmological passages in a non-literal manner is very similar to modern science's attempt to eliminate the Church from today's discussion concerning whether evolution is a valid theory of science. Based on the claim that the Church was wrong about physics and astronomy in the case of Galileo, it has also concluded that because of similar ignorance about geology and paleontology, the Church is wrong about Darwin. This ploy has been used countless times in classrooms, books and general discussion. The Church is ridiculed and summarily dismissed as an authority on the subject of science and other modern issues (abortion, stem cell research, sexual relations, *etc.*) since, as the argument goes, 'it should have learned its lesson' about the supremacy of science when it erroneously chastised Galileo. Annibale Fantoli claims, for example, that

...it seems to me erroneous, even from a religious point of view, to claim that by now the "Galileo Affair" is a thing of the past, a question closed forever. It remains, and should remain, "open," on the contrary, as a severe lesson of humility to the Church at all levels and as a warning, no less rigorous, not to wish to repeat in the present or in the future the errors of the past, even the most recent past.¹⁵⁶

Such sentiments are filled with theological and scientific presumption. As we have presented in meticulous detail, the Church was not wrong, Galileo was wrong, for he had no proof of heliocentrism and there never has been proof. The only lesson to be learned is this: as the Church put its faith in Scripture, the Fathers, and the guidance of the Holy Spirit for the fifteen hundred years prior to Galileo, it must do the same for the five hundred years after Galileo and beyond. Tradition and faithfulness are the Church's trademark; reinvention and revolution are the world's curse. In reality, whereas the world sought an apology from the Church for its censorship of Galileo, it is now the world that owes an apology to the Church for doubting the Church's God-given authority to decide such matters for the good of the whole world.

Galileo: Granting then that in many passages the Scriptures not only can be, but necessarily must be, interpreted differently from the apparent meaning of the words, it seems to me that in cases of natural disputes Scripture ought to be put off to the last place.... Moreover it is agreed that, to accommodate itself to the understanding of everyone, Scripture says many things which are different from absolute truth in the impression it gives and in the

meaning of its words. On the other hand nature is inexorable and immutable and cares not whether its hidden causes and modes of operation are or are not open to the capacities of humans, and hence it never violates the terms of its established laws.

As a result it seems that natural effects, which either sense experience places before our eyes or necessary demonstrations reveal, should never be placed in doubt by passages of Scripture whose words give a different impression; and further not everything said in the Scriptures ought to be associated strictly with some effect in nature. Because of this characteristic alone, *i.e.*, that Scripture accommodates itself to the capacity of uncouth and uneducated people, Scripture does not refrain from faintly sketching its most important dogmas, thus attributing to God himself conditions which are very far from, and contrary to, his essence. So who would wish to maintain with certainty that Scripture abandons this characteristic when it speaks incidentally of the earth or the sun or other creatures, and has chosen to restrain itself completely within the limited and narrow meaning of the words? – and especially when it speaks about those created things which are very far from the primary purpose of the Scriptures? – or even when it speaks of things which, when stated and presented as bare and unadorned truths, would quickly damage its primary intention by making the common man more stubbornly resistant to be persuaded of the articles concerning his salvation?

We often hear the same arguments today concerning the so-called “uneducated peoples” of biblical times. The academic elite of our day have conditioned us to think of early man as a grunting and insipid hunter-gatherer who could only understand the simplest of concepts. This is far from the truth. In the early chapters of Genesis the biblical picture of early man is someone with vast intellectual capacity and the physical prowess to match it (Genesis 1-11).

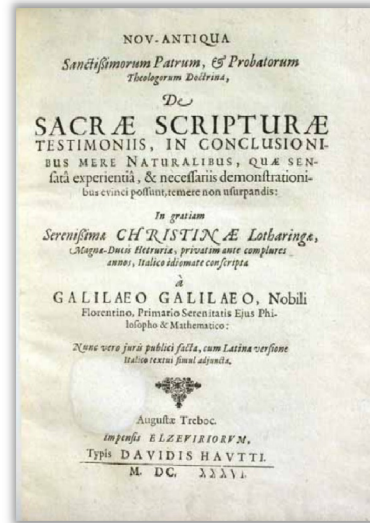
In regard to understanding the mechanics of the heavens, even the so-called “educated” people of our modern day use the same phenomenal language as did early man when speaking about celestial phenomena. After thousands of years of language development and scientific advances we still say “the sun rises” and “the sun sets,” just as ancient man did. Technically speaking, this choice of words is scientifically inaccurate. That being the case, should we then look upon ourselves as uneducated? Obviously not, since our very education teaches us that there is a vast difference between speaking figuratively and knowing the literal truth.

Chapter 3 The Church's Case Against Galileo

Covers of Galileo Books and Letters



Dialogue on the Two Great World Systems



Letter to Duchess Christina



Book Concerning Sunspots



The Book Siderius Nuncius

Chapter 3 The Church's Case Against Galileo

As noted earlier, the sun neither literally rises nor literally sets in the heliocentric or geocentric systems. In the former the sun is the centerpiece and in the latter it is revolving around the Earth. Although the sun is moving in the geocentric system, it is not literally “rising” or “setting”; rather, such terms merely describe the contrasting movement of the sun as measured against the backdrop of the Earth’s horizon. As the saying goes, one does not have to be a rocket scientist to know the difference between describing the end of the day as “the sun is setting” over against the fact that, of the two bodies (the Earth or the sun), one must be considered the centerpiece and the other the orbiting body. Those facts can easily be discerned by the human intellect whether the person is from 4000 B.C. or 2000 A.D.

As the people in ancient cultures spoke about the cosmos the same as we do today, similarly, as they once did, we still employ anthropomorphic language when we describe the attributes of God. We continue to refer to God’s “eyes” watching us and God’s “ears” hearing our words just as the so-called “uneducated” peoples of former years. All in all, it is a pure myth that peoples of former times were not able to distinguish phenomenal language from actual events.

By the same token, if God had put in Holy Writ the precise scientific explanation of each and every natural phenomenon, it is likely that few if any scientists today would be able to understand it. Modern science has failed time after time to come to an adequate understanding of how the universe operates. Its two major theories of how the universe is constructed on macro- and micro-scales, namely, General Relativity and Quantum Mechanics, flatly contradict each other. As the history of science has shown, for every theory that is advanced as truth, another one is right behind waiting to dethrone it. As Max Planck once said: “Science proceeds funeral by funeral.”

In light of the foregoing, one of the most important but overlooked dimensions of the problem between science and faith is the vast difference that exists between gathering scientific data and the correct interpretation of that data. Scientific data is plentiful and wide-ranging. We have thousands of modern instruments that gather millions of bits of data every day. But correctly interpreting the data into a unified and cohesive whole is much more difficult to accomplish and few have the gift to do so. The history of science is not only riddled with misinterpretations of scientific data but it remains the case that dozens of viable interpretations can be produced from a single scientific datum. We, for example, assign the word “gravity” to the simple phenomenon of an apple dislodging from a tree and suddenly falling to the ground. If we believe what our eyes show us, it is a scientific fact that apples fall toward the Earth. But there are about a dozen theories, and still counting, as to the nature of the force that brings the

apple toward the Earth. Modern man does not know if it is a push, a pull, or both or neither. Simply put, for all his supposed scientific prowess, modern man has not been able to explain why an apple falls to the ground. Should we consider ourselves “uneducated” because we cannot answer that simple question? Perhaps a little humility would not hurt in this case. Perhaps then we would not be so cock-sure of ourselves against Holy Writ’s testimony of what is fixed and what is revolving. In any case, the point remains that science is not some monolithic consensus of belief and practice that produces all the right answers upon request. Science is prone to errors, especially in its interpretation of data. As one of the more respected and famous physicists, Richard Feynman, admitted: “Science is a culture of doubt.”

In regard to what is true, it is also erroneous to create a dichotomy in Scripture between a primary purpose and a secondary purpose. Merely because a certain fact is considered primary (*e.g.*, salvation, resurrection, eternity) does not mean that it is any truer than a secondary fact (*e.g.*, Jacob had twelve sons). If it were the case that a secondary fact were proven untrue, it would directly effect the veracity of primary facts, since logical reasoning would dictate that if the authoritative source could be wrong on a secondary fact why could it not be wrong on a primary fact? Obviously, an imperfect mind produced the one error so there is nothing to stop it from producing another. If anything, the veracity of the secondary facts upholds the veracity of the primary facts, and *vice-versa*. The Scriptural axiom understands this relationship very well, for as Jesus said: “He who is faithful in a very little is faithful also in much; and he who is dishonest in a very little is dishonest also in much.”¹⁵⁷

Galileo: Granting this, and also granting that it is even more obvious that two truths can never be contrary to each other, it is the task of wise expositors to try to find the true meanings of sacred passages in accordance with natural conclusions which previously have been rendered certain and secure by manifest sensation or by necessary demonstrations. Furthermore, as I have said, although Scripture has been dictated by the Holy Spirit, for the reasons mentioned above it is open in many passages to interpretations far removed from the literal meaning; and moreover we cannot determine with certitude that all the interpreters speak with divine inspiration. As a result I believe that it would be prudent to agree that no one should fix the meaning of passages of Scripture and oblige us to maintain as true any natural conclusions which later sensation or necessary and demonstrative proofs might show to be contrary to truth. Who would we wish to place limits on human understanding?

Who would wish to assert that everything which is knowable about the world is already known? And therefore, except for the articles concerning salvation and the foundations of the faith, against the strength of which there is no danger that any valid and forceful doctrine could ever arise, it would be perhaps the best advice not to add anything without necessity. Granting this, what greater confusion could arise than from the increase of questions from people who, besides our not knowing whether they speak with inspiration by heavenly power, we do know are totally barren of the intelligence needed not only to challenge but even to understand the demonstrations used by the most exact sciences to confirm their conclusions?

Similar to many people who argue for the heliocentric position today, Galileo argued that either the proof had already been demonstrated, or, if it had not been demonstrated, it will someday be the case. For example, today when a person enters a scientific museum and observes the Foucault pendulum circling around every twenty-four hours, he is convinced this is an indisputable demonstration of the Earth's rotation beneath him. It is not really his fault, however, since he has been unduly conditioned by the modern scientific establishment to think that the only solution to the turning pendulum is a rotating Earth. The vast majority of people do not even know that an equally viable alternative exists (*i.e.*, the rotation of the stars around a fixed Earth), much less would they be able to know how to argue for its validity against the scientific *status quo*. Galileo was of a similar mindset. Simply because of a few pieces of circumstantial evidence that suggested the Earth might be rotating and revolving,¹⁵⁸ coupled with the slight but inherent problems with the Ptolemaic model, Galileo was convinced that Copernicanism was a reality. He then expanded on this logic by arguing from Benito Pereyra's famous 16th century commentary on Genesis regarding four rules on biblical interpretation, the last being:

Since every truth agrees with every other truth, the truth of Sacred Scripture cannot be contrary to the true arguments and evidence of the human sciences.

Galileo quotes Pereyra's rule in his 1615 *Letter to the Grand Duchess Christina*.¹⁵⁹ The problem, of course, is that geocentrism does not contradict the "human sciences," for the latter are so varied and uncertain about cosmological issues that no one should dare refer to them as a monolithic source of scientific facts. The real truth is that no scientific proof for heliocentrism exists. Ironically, if modern science after Galileo

has shown us anything worth knowing it is that it cannot disprove biblical cosmology.

Here, interestingly enough, is where we pause to note the same rationale in Galileo's thinking that he adopted near his death in 1641 when he told Francesco Rinuccini that he rejected Copernicanism. In the *Letter to the Grand Duchess Christina* (which is a letter Galileo wrote as an expanded version of his *Letter to Castelli*), Galileo admits the following:

I should judge that the authority of the Bible was designed to persuade men of those articles and propositions which, surpassing all human reasoning, could not be made credible by science, or by any other means than through the very mouth of the Holy Spirit. Yet even in those propositions which are not matters of faith, this authority [Scripture] ought to be preferred over that of all human writings which are supported only by bare assertions or probable arguments, and not set forth in a demonstrative way. This I hold to be necessary and proper to the same extent that divine wisdom surpasses all human judgment and conjecture.¹⁶⁰

From the above words [of Augustine in *The Literal Interpretation of Genesis*, 1, 21] I conceive that I may deduce this doctrine: That in the books of the sages of this world there are contained some physical truths which are soundly demonstrated, and others that are merely stated; as to the former, it is the office of wise divines to show that they do not contradict the Holy Scriptures. And as to the propositions which are stated but not rigorously demonstrated, anything contrary to the Bible involved in them must be held undoubtedly false and should be proved so by every possible means.¹⁶¹

Among physical propositions there are some with regard to which all human science and reason cannot supply more than a plausible opinion and probable conjecture in place of a sure and demonstrated knowledge; for example, whether the stars are animate. Then there are other propositions of which we have (or may confidently expect) positive assurances through experiments, long observation, and rigorous demonstration; for example, whether or not the earth and the heavens move, and whether or not the heavens are spherical. As to the first sort of propositions, I have no doubt that where human reason cannot reach – and where consequently we can have no science but only opinion and faith – it is necessary in piety to comply absolutely

with the strict sense of the Scripture. But as to the other kind, I should think, as said before, that first we are to make certain of the fact, which will reveal to us the true senses of the Bible, and these will most certainly be found to agree with the proved fact (even though at first the words sounded otherwise), for two truths can never contradict each other. I take this to be an orthodox and indisputable doctrine, and I find it specifically in St. Augustine...¹⁶²

Of course, Galileo appears to be what James describes as “a double-minded man,”¹⁶³ for in one breath he extols the authority of Scripture over the unproven claims of science; in the other he leaves himself one scientific exception that he claims Scripture did not address in a definitive way for him to cease from imposing heliocentrism upon it. The real irony is that Galileo employs Ecclesiastes 3:11 to help prove his point, but reverses the traditional meaning of the passage so that he can use it to support his favorite cosmological model. Thus in the midst of the foregoing passages he adds:

We have it from the very mouth of the Holy Ghost that God delivered up the world to disputations, ‘so that man cannot find out the work that God hath done from the beginning ever to the end.’ In my opinion no one, in contradiction to that dictum, should close the road to free philosophizing about mundane and physical things, as if everything had already been discovered and revealed with certainty.... One of these is the stability of the sun and mobility of the earth, a doctrine believed by Pythagoras and all his followers...amplified and confirmed with many observations and demonstrations by Nicholas Copernicus.¹⁶⁴

Galileo's second argument in the *Letter to Castelli* (i.e., that not all the speakers in the Bible spoke from divine inspiration) is also fallacious. In fact, the mere admission that not all spoke under divine inspiration means that some, indeed, *did* speak with divine inspiration. The only question is: who spoke under inspiration and who did not? Moses certainly spoke with divine inspiration when he wrote the first chapters of Genesis since he was not born until thousands of years after the creation. The only way he could have known how God created the cosmos is through the revelation provided by divine inspiration.¹⁶⁵ Moses' cosmology, if interpreted at face value, is geocentric, and thus Galileo's argument has been answered since no inspired biblical author following Moses contradicted what Moses wrote under divine inspiration. The same divine inspiration was working in all the remaining biblical writers who taught

that the universe is geocentric. In reality, Galileo has little basis from which to form his objection since in the latter part of his letter to Castelli he already committed himself to viewing Joshua's account of the stoppage of the sun as a divinely inspired work, for otherwise he would have no reason to attempt to explain the account from a heliocentric perspective.¹⁶⁶ Accordingly, the Psalms, from which much of the geocentric witness originates, have always been accepted for their divine inspiration. In fact, the Psalms are quoted in the New Testament as a divinely authoritative source more than any other Old Testament book. Hence, if there is any book in the Old Testament that considers the speaker as one who was under direct divine dictation it is the Psalms, King David being the primary writer. The same divine inspiration was also given to Solomon, the author of the geocentric passages in Ecclesiastes and Proverbs. The same is true of Isaiah and his treatment of Hezekiah's sundial; and Habakkuk in his citing of Joshua's long day. The only time a question rises as to whether the speaker is under divine inspiration is in Job 22:13-14 when Eliphaz is speaking to Job, for later in the book, God chastises Eliphaz for not speaking truthfully (Jb 42:7). But even in that case, God is not faulting Eliphaz for his cosmological knowledge but only his misapplication of the evidence to the innocent Job. Even if there was some doubt as to divine inspiration, nevertheless, there are an abundance of passages in other parts of Scripture that we know positively the speaker was under divine inspiration. As it stands, Galileo did not have a case. His objection actually strengthens the geocentric case, for if he cannot prove that the writer is not inspired, he is bound to whatever that writer dictates as propositional truth.

Galileo: I believe that the authority of Sacred Scripture has the sole aim of persuading men of those articles and propositions which, being necessary for salvation but being beyond all human discourse, cannot come to be believed by any science or by any means other than by the mouth of the Holy Spirit himself. I do not think that it is necessary to have belief in cases in which God himself, who is the source of meaning, of discourse, and of intellect, has put the use of revelation to one side and has decided to give us in another way the knowledge which we can obtain through science. This is especially true of those sciences of which only a very small part, and then as projected in conclusions, is to be found in the Scriptures. Such is precisely the case with astronomy, of which there is such a small part in the Scriptures that the planets are not even mentioned. However if the sacred writers had intended to teach us about the arrangements and movements of the celestial bodies, they would

Chapter 3 The Church's Case Against Galileo

not have said so little, almost nothing, in comparison with the infinite, highest, and admirable conclusions contained in this science...¹⁶⁷

Galileo's argument is once again off the mark. His contention is that since Scripture does not cover the area of cosmology as vastly as it does other subjects of import, we can conclude that it did not intend its statements about cosmology to be taken too seriously or with the same authority as non-cosmological passages. This is another instance in which Galileo creates his own criteria so that he can then use it to dismiss ideas he does not like. The extent of Scripture's treatment of cosmology, or lack thereof, has nothing to do with the veracity of its statements on cosmology. Galileo's argument would be akin to saying that since the 26 volumes of the *Encyclopedia Britannica* treat the subject of spiders in just one volume, and in only certain pages of that volume, this puts in doubt the authority with which the Britannica speaks on the issue. The truth is, the Britannica will speak as authoritatively on spiders as it does on any other subject, even though it may treat spiders in only a small percentage of its words.

Galileo's argument is also erroneous based on the simple fact of how the Bible begins its address to man in its very first book. The opening words of the first chapter of Genesis do not begin with a description of God or man, but with a detailed account of the structure of the cosmos. Obviously, communicating the underpinnings of the celestial world was the most important piece of revelatory information God initially needed to tell mankind. Not coincidentally, the very first fact we are told about the cosmos is that the Earth was created first, before the sun and stars, thus implying a geocentric universe. If, as Galileo claims, (a) God did not consider the treatment of cosmology as a very important matter to address, and (b) that its resultant scarcity in Scripture meant we were not required to take the issue very seriously, why did God make it the foundation of Holy Writ's opening chapters?

The Trial of Galileo

As we have noted, the interpretation of Scripture is key to grasping the implications of the Galileo affair. After Galileo's publication of *Sidereus nuncius* ("Starry Messenger") in 1610 with its forthright advocacy of heliocentrism and consequent dependence on a non-literal interpretation of Scripture, objections to his methodology were soon to be voiced. Two Dominican friars from Florence, Niccolò Lorini and Tommaso Caccini, took the first shots as investigators for the Inquisition. The archives reveal that their investigation began in February 1615.¹⁶⁸ A year later, on

Chapter 3 The Church's Case Against Galileo

February 19, 1616, Caccini submitted two statements to the Holy Office that summed up his objections to the Copernican model:

- The sun is at the center of the world and hence immobile in regards to local motion.
- The Earth is not the center of the world and is not immobile, but moves according to the whole of itself, and also with diurnal motion.



Five days later, February 24, the Holy Office issued these censures:

Regarding the first proposition:

All agreed that this proposition is foolish and absurd in philosophy and is formally heretical, because it explicitly contradicts sentences found in many places in Sacred Scripture according to the proper [literal] meaning of the words and according to the common interpretation and understanding of the Holy Fathers and of learned theologians.

Regarding the second proposition

All agreed that this proposition receives the same censure in philosophy and in respect to theological truth, it is at least erroneous in faith.

Chapter 3 The Church's Case Against Galileo

On February 25, 1616, **Pope Paul V** ordered Cardinal Bellarmine to summon Galileo and, “in the presence of a notary and witnesses, warn him to abandon the condemned opinion and in every way abstain from teaching, defending or discussing it.”¹⁶⁹ What is not commonly known is that the meeting of February 25 had three parts, and this sequence shows how great a part the pope played in the final decision against Galileo. The official document from the third part of the meeting stated the following:



The Most Illustrious Cardinal Millini notified the Reverent Lord Assessor and Lord Commissary of the Holy Office that, after the reporting of the judgment by the Father Theologians against the propositions of the mathematician Galileo, to the effect that the sun stands still at the center of the world and the earth moves even with a diurnal motion, His Holiness ordered the Most Illustrious Cardinal Bellarmine to call Galileo before himself and warn him to abandon these opinions; and if he should refuse to obey, the Father Commissary, in the presence of notary and witnesses, is to issue him an injunction to abstain completely from teaching or defending that doctrine and opinion or from discussing it; and further, if he should not acquiesce, he is to be imprisoned.¹⁷⁰

Galileo obeyed the order, which is recorded in the minutes of the Holy Office of March 3, 1616:

The Most Illustrious Lord Cardinal Bellarmine having given the report that the mathematician Galileo Galilei had acquiesced when warned of the order of the Holy Congregation to abandon the opinion which he held till then, to the effect that the sun stands still at the center of the spheres but the earth is in motion.¹⁷¹

This was followed by a formal decree issued on March 5, 1616. According to the wording of the decree, Paul V's and Bellarmine's rejection of Copernicanism was not considered some private affair between them and Galileo. The decree stated very clearly that its information was to be “published everywhere” and that its specific audience was the “whole of Christendom”:

Decree of the Sacred Congregation of the most Illustrious Cardinals of the Holy Roman Church specially delegated by Our Most Holy Lord Pope Paul V and the Holy Apostolic See to publish everywhere throughout the whole of Christendom.¹⁷²

Furthermore, the decree contained six explicit paragraphs reiterating the condemnation not only of the book written by “Nicolaus Copernicus” but, more specifically, the original Greek inventors of heliocentrism as represented by “the Pythagorean doctrine – which is false and altogether opposed to Holy Scripture – of the motion of the Earth and the immobility of the Sun.” The Church was going right to the root of the problem, – the false ideas propagated by the Greeks. Beginning at line 31, the decrees states:

And whereas it has also come to the knowledge of the said Congregation that the Pythagorean doctrine – which is false and altogether opposed to Holy Scripture – of the motion of the Earth and the immobility of the Sun, which is also taught by Nicolaus Copernicus in *De revolutionibus orbium coelestium*, and by Diego de Zúñiga [in his book] on Job, is now being spread abroad and accepted by many – as may be seen from a certain letter of a Carmelite Father, entitled *Letter of the Rev. Father Paolo Antonio Foscarini, Carmelite, on the Opinion of the Pythagoreans and of Copernicus concerning the Motion of the Earth, and the Stability of the Sun, and the New Pythagorean System of the World, at Naples, Printed by Lazzaro Scorriggio, 1615*; wherein the said Father attempts to show that the aforesaid doctrine of the immobility of the Sun in the center of the world, and of the Earth's motion, is consonant with truth and is not opposed to Holy Scripture. Therefore, in order that this opinion may not insinuate itself any further to the prejudice of the Catholic truth, the Holy Congregation has decreed that the said Nicolaus Copernicus, *De revolutionibus orbium*, and Diego de Zúñiga, *On Job*, be suspended until they be corrected; but that the book of the Carmelite Father, Paolo Antonio Foscarini, be altogether prohibited and condemned, and that all other works likewise, in which the same is taught, be prohibited, as by this present decree, it prohibits, condemns, and suspends them all respectively.¹⁷³

...He has only been notified of the declaration made by the Holy Father and published by the Sacred Congregation of the Index, whose content is that the doctrine attributed to Copernicus (that

the earth moves around the sun and the sun stands at the center of the world without moving from the east to the west) is contrary to Holy Scripture, and therefore cannot be defended nor held. In witness whereof we have written and signed this with our own hands, on the 26th day of May 1616.¹⁷⁴

Once again, by the specific statement “the declaration made by the Holy Father” we see the prominent part played by the pope in the whole affair. According to Bellarmine’s official letter, the decision that disallowed anyone from asserting the Earth moved was not one formed by the Sacred Congregation and rubber stamped by the pope, but was first decided by the pope and then published by the Sacred Congregation. That Paul V and Cardinal Bellarmine were of one mind on Galileo was revealed no better than in a letter written by the Tuscan ambassador in Rome, Piero Guicciardini, to Grand Duke Cosimo II, dated March 4, 1616. According to Finocchiaro’s assesment,

Guicciardini appeared to have some inside information about the proceedings [against Galileo], since his position as ambassador gave him direct access to the pope himself as well as to cardinals and other well-connected diplomats. The letter observes that Pope Paul V and Cardinal Bellarmine agreed that Copernicanism was erroneous and heretical. This was and remains precious information.¹⁷⁵

As for the imprimatur given to Galileo for his book *The Dialogo*, the facts are quite opposed to Galileo’s rendition. The censor of the *Dialogo* was Fr. Niccolo Riccardi, a man quite favorable to Galileo and his ideas (although he believed the argument about celestial revolutions to be somewhat useless due to his idea that the angels moved the stars and planets). Still, Riccardi sensed that the *Dialogo* was a thinly veiled advancement of Copernicanism that on the face of it was coming to loggerheads with the 1616 decree of which he was very cognizant. His assistant, Fr. Raffaele Visconti, was given the job to edit the book, wherein he followed the advice of Bellarmine and the 1620 censors that all references to heliocentrism should be treated as hypothetical. Even with these changes, Riccardi was still troubled, however. His dilemma was compounded by the fact that he was receiving undue pressure from other quarters, namely, the papal secretary Giovanni Ciampoli and the Duke of Tuscany’s ambassador, Niccolini.¹⁷⁶ Bowing to the pressure, Riccardi granted an imprimatur to the *Dialogo* in advance, on the condition that he would revise it himself, and then pass on each revised sheet to the printer. This action, of course, was completely devoid of proper protocol and

Galileo took full advantage of this breach by seeking to have the book edited and published in Florence, the haven for all things heliocentric at that time. Riccardi refused, but Galileo insisted that he must do so because the outbreak of the bubonic plague made it impossible to come to Rome. He also enlisted the help of the Duke, his ambassador, and the papal secretary to put more pressure on Riccardi who eventually succumbed to the “beautiful cousin Caterina who made him yield over a bottle of Chianti at a dinner table.” The assigned Florentine editor, the Dominican Fr. Jacinto Stefani, made only a few minor alterations for form’s sake and thus Galileo’s book was left virtually intact. Riccardi tried to keep at least some control by delaying the submission of his required preface and concluding sections, but even then the subterfuge continued as Caterina was again commissioned to sway Riccardi, although he was said to be “dragged by the hair” when he finally relinquished the needed documents.¹⁷⁷ Needless to say, the printing of the *Dialogo* began in 1631 with the first copies being produced in February 1632. By August, Urban’s Holy Office got wind of Galileo’s shenanigans with Riccardi. The book was halted and confiscated and Galileo was summoned to Rome in October 1632, which he succeeded in delaying until early 1633.

Not only had Galileo defended Copernicanism, but as Melchior Inchofer, one of the advisors of the Inquisition who thoroughly examined the *Dialogo*, put it:

...if the defendant had not adhered firmly to the Copernican opinion and believed it physically true, he would not have fought for it with such asperity, nor would he have written the *Letter to the Grand Duchess*, nor would he have held up to ridicule those who maintain the accepted opinion, and as if they were dumb mooncalves [and] described them as hardly deserving to be called human beings....he holds all to be mental pygmies who are not Pythagorean or Copernican, it is clear enough what he has in mind, especially as he praises by contrast William Gilbert, a perverse heretic and a quibbling and quarrelsome defender of this opinion.¹⁷⁸

Inchofer had read Galileo correctly. Although feigning capitulation, the inner Galileo believed in heliocentrism as strongly as he believed his own name. Just a few years earlier in his very long and technical 1624 reply to Francesco Ingoli (a priest who had written a 1616 essay titled: “On the Location and Rest of the Earth, Against the Copernican System”), Galileo states: “I say I have other evidences not previously observed by anyone, which are necessarily convincing about the certainty of the Copernican system.”¹⁷⁹ Shortly before he traveled to Rome to face his

Chapter 3 The Church's Case Against Galileo

second trial, he wrote to Elia Diodati in 1633 the following words concerning Libert Froidmont who wrote a book against Copernicus:

When Froidmont or others have established that to say the earth moves is heresy while demonstrations, observations, and necessary conclusions show that it does move, in what swamp will he have lost himself and the Holy Church?¹⁸⁰

But in front of the inquisitors Galileo adhered to his story, claiming as a final statement that he would “promise to resume the arguments already brought in favor of the said opinion which is false and has been condemned, and to confute them in such a most effectual manner.”¹⁸¹

As the 1633 discovery of the second Bellarmine document shows, a written injunction was given to Galileo on February 25, 1616 not to teach the heliocentric system. As noted earlier, one of the “Dominican friars” that Galileo admits to being present at the 1616 meeting is Michelangelo Seggizi, who, as was his function as the Commissary of the Holy Office, would be the one who handed Galileo the injunction. When Galileo was finally summoned before Pope Urban, the existence and delivery of the injunction was confirmed. The 1633 sentence against Galileo stated:

...after being informed and warned in a friendly way by the same Lord Cardinal [Bellarmine], you were given an injunction by the then Commissary of the Holy Office in the presence of a notary and witnesses to the effect that you must completely abandon the said false opinion, and that in the future you could neither hold, nor teach it in any way whatever, either orally or in writing; having promised to obey, you were dismissed.¹⁸²

Pope Urban VIII Appeals to the Grand Duke of Tuscany

As was the case with Paul V, the present pope, Urban VIII, took the Galileo affair very seriously. From the records we have, there can be little doubt that Urban understood that nothing less than the veracity of Scripture was at stake. He was not about to let Galileo reverse fifteen centuries of Church teaching on little more than a scientific hunch. That the pope was interpreting Galileo's heliocentrism as a direct attack upon Scripture is noted in the text of the sentence against him that was approved by the pope:



Chapter 3 The Church's Case Against Galileo

...the said certificate [from Bellarmine] you produced in your defense aggravates your case further since, while it says that the said opinion is contrary to Holy Scripture, yet you dared to treat of it, defend it, and show it as probable...¹⁸³

Pope Urban VIII's involvement and seriousness of mind is noted in how he communicated directly and privately with the Grand Duke of Tuscany. Over the period of September 1632 to June 1633 the pope's resolve against both heliocentrism and Galileo was made crystal clear for both the hierarchy of the Church and the Tuscany government. Beginning on September 5, 1632, the Grand Duke's ambassador, Francesco Niccolini, writes to Cioli:

Yesterday I did not have the time to report to Your Most Illustrious Lordship what had transpired (in a very emotional atmosphere) between myself and the Pope in regard to Mr. Galilei's work....I too am beginning to believe...that the sky is about to fall. While we were discussing those delicate subjects of the Holy Office, His Holiness exploded in great anger, and suddenly he told me that even our Galilei had dared enter where he should not have, in the most serious and dangerous subjects which could be stirred up at this time. I replied that Mr. Galilei had not published without the approval of his ministers....He answered, with the same outburst of rage, that he had been deceived by Galileo and Ciampoli...¹⁸⁴

Niccolini, clearly trying to make headway for Galileo, explained to Pope Urban that Galileo's book, the *Dialogo*, was "dedicated to our Most Serene Patron," namely, the Grand Duke who, as was common in those days, had been secretly financing Galileo's work. But the pope's reply showed he was not going to budge an inch, and the reasons were theological in nature. Urban called Galileo's book nothing less than "the worst harm to religion...ever conceived." Niccolini describes the pope's reaction as follows:

He said that....in such matters, involving great harm to religion (indeed the worst ever conceived), His Highness [the Grand Duke] too should contribute to preventing it, being a Christian prince....I retorted that...I did not believe His Holiness would bring about the prohibition of the already approved book without at least hearing Mr. Galilei first. His Holiness answered that this was the least ill which could be done to him and that he should take care not to be summoned by the Holy Office; that he has

Chapter 3 The Church's Case Against Galileo

appointed a Commission of theologians and other persons versed in various sciences, serious and of holy mind, who are weighing every minutia, word for word, since one is dealing with the most perverse subject one could ever come across....Finally, he told me to write to our Most Serene Patron that the doctrine is extremely perverse, that they would review everything with seriousness, and that His Highness should not get involved but should go slow; furthermore, not only did he impose on me the secret about what he had just told me, but he charged me to report that he also was imposing it on His Highness [the Grand Duke].¹⁸⁵

On September 11, Niccolini writes:

In fact, the Pope believes that the Faith is facing many dangers and that we are not dealing with mathematical subjects here but with Holy Scripture, religion, and Faith....However, above all he says, with the usual confidentiality and secrecy, that in the files of the Holy Office they have found something which alone is sufficient to ruin Mr. Galilei completely; that is, about twelve years ago, when it became known that he held this opinion and was sowing it in Florence, and when on account of this he was called to Rome, he was prohibited from holding this opinion by the Lord Cardinal Bellarmine, in the name of the Pope and the Holy Office. So he says he is not really surprised that His Highness is acting with so much concern, for he has not been told all the circumstances of this business.¹⁸⁶

On September 18, Niccolini reports that the pope has no qualms about his strong reaction against Galileo:

He [the pope] retorted that in cases where religion might suffer damage, it was less harmful to overreact occasionally than to be remiss as a result of the reasons I mentioned, and thus to endanger Christianity with some sinister opinion; furthermore, he had been told by His Holiness that, since we are dealing with dangerous dogmas, His Highness [the Grand Duke, Cosimo Medici] should put aside all respect and affection toward his Mathematician and be glad to contribute himself to shielding Catholicism from any danger.

I replied by again humbly begging him to consider that Mr. Galilei is Mathematician to His Highness, currently employed

Chapter 3 The Church's Case Against Galileo

and salaried by him, and also universally known as such. His Holiness answered that this was another reason why he had gone out of the ordinary in this case and that Mr. Galileo was still his friend, but these opinions were condemned about sixteen years ago and Galileo had gotten himself into a fix which he could have avoided; for these subjects are troublesome and dangerous, this work of his is indeed pernicious, and the matter is more serious than His Highness thinks....Then he added, telling me to report it fully to His Most Serene Highness, that one must be careful not to let Mr. Galilei spread troublesome and dangerous opinions under the pretext of running a certain school for young people...¹⁸⁷

On November 13, 1632, Niccolini again shows the pope's resolve in silencing the Copernican doctrine and bringing Galileo to trial in Rome:

...this morning I discussed it with His Holiness himself. After mentioning that Mr. Galilei is ready to obey and to comply with what he will be ordered to do, I undertook to explain to His Holiness the same things at great length, to move him to pity poor Mr. Galileo, who is now so old and whom I love and adore....However, His Holiness told me that...there was no way of avoiding Mr. Galilei's coming to Rome...for indeed it was necessary to examine him personally, and that God would hopefully forgive his error of having gotten involved in an intrigue like this after His Holiness himself (when he was cardinal) had delivered him from it....Finally, he reiterated that one is dealing with a very bad doctrine.¹⁸⁸

On February 27, 1633, just a few months now before Galileo's trial, Niccolini reiterates the pope's resolve:

Then he [the pope] went on to say that, in short, Mr. Galilei had been ill-advised to publish these opinions of his, and it was the sort of thing for which Ciampoli was responsible....His Holiness gives the impression that Mr. Galileo's doctrine is bad and that he even believes it, the task is not easy....His Eminence [Cardinal Antonio Barberini, brother of the pope] replied that he felt warmly toward Mr. Galilei and regarded him as an exceptional man, but this subject is very delicate for it involves the possibility of introducing some imaginary dogma into the world...¹⁸⁹

Chapter 3 The Church's Case Against Galileo

As the time gets nearer to the trial, Pope Urban's resolve seems to strengthen even more. On March 13, 1633, Niccolini writes:

I replied that I hoped His Holiness would double the obligation imposed on His Highness by exempting him from this [the trial]....but he again said he does not think there is any way out, and may God forgive Mr. Galilei for having meddled with these subjects. He added that one is dealing with new doctrines and Holy Scripture, that the best course is to follow the common opinion since he too is attracted to them and is a friend of the new philosophy; further, Mr. Galileo had been his friend, they have conversed and dined several times together familiarly, and he was sorry to have to displease him, but one was dealing with the interests of the faith and religion. I think I went on to add that if he is heard, he will easily give every satisfaction, though with the proper reverence which is due the Holy Office. He replied that Mr. Galilei will be examined in due course, but there is an argument which no one has ever been able to answer: that is, God is omnipotent and can do anything; but if He is omnipotent, why do we want to bind him? I said that I was not competent to discuss these subjects, but I had heard Mr. Galilei himself say that first he did not hold the opinion of the earth's motion as true and then that since God could make the world in innumerable ways, one could not deny that He might have made it this way. However, he got upset and told me that one must not impose necessity on the blessed God; seeing that he was losing his temper, I did not want to continue discussing what I did not understand, and thus displease him, to the detriment of Mr. Galilei.¹⁹⁰

On June 19, 1633, Niccolini reveals that it is the pope himself that formulated the conclusion that Galileo's cosmology was "erroneous and contrary to Holy Scripture":

This morning His Holiness displayed very friendly feelings in innumerable ways....Again I pleaded that Mr. Galilei's trial be brought to an end....However, he said that in regard to the issue, there is no way of avoiding prohibiting that opinion, since it is erroneous and contrary to the Holy Scripture dictated by the mouth of God; and in regard to the person, as ordinarily and usually done, he would have to remain imprisoned here for some time because he disobeyed the orders he received in the year 1616.¹⁹¹

Chapter 3 The Church's Case Against Galileo

Niccolini's revelation about the pope's decision coincides with the minutes of the Inquisition's June 16, 1633 meeting which "reported a papal decision outlining the conclusion of the trial, including an injunction to never again discuss the topic on pain of being treated as a relapsed heretic."¹⁹²

The Sentence and Punishment of Galileo

On Wednesday, June 22, 1633, with Galileo dressed in a white shirt to symbolize penitence, he knelt as the full text of the final sentence against him was read: [NB: the more significant parts are underlined and endnoted in the original Italian]

Sentence: Whereas you, Galileo, son of the late Vincenzo Galilei, Florentine, age seventy years, were in the year 1615 denounced to this Holy Office for holding as true the false doctrine taught by some that the sun is the center of the world and immovable and that the Earth moves, and also with diurnal motion,¹⁹³ for having disciples to whom you taught the same doctrine; for holding correspondence with certain mathematicians of Germany concerning the same; for having printed certain letters, entitled "On the Sunspots," wherein you developed the same doctrine as true; and for replying to the objections from the Holy Scriptures, which from time to time were urged against it, by glossing the said Scriptures according to your own meaning:¹⁹⁴ and whereas there was thereupon produced the copy of a document in the form of a letter, purporting to be written by you to one formerly your disciple, and in this divers propositions are set forth, following the position of Copernicus, which are contrary to the true sense and authority of Holy Scripture:¹⁹⁵

The seriousness with which Urban VIII had conducted the preliminary judgments against Galileo were carried over and formalized in the final sentence. Note that both the revolution of the Earth around the sun and the rotation of the Earth on its axis are condemned. From the outset we see why the pope and his Holy Office considered this case one of the most serious issues facing the Church and why they spent so much time and energy to suppress it. The main issue is the veracity of Holy Scripture, something which Galileo "glossed" over with his "own meaning," and therefore did not discover its "true sense." Again, we need to be reminded that the pope and his Holy Office were certainly aware of

Chapter 3 The Church's Case Against Galileo

the theoretical possibility of interpreting Scripture's cosmological passages in a figurative sense. It is not as if these clerics were blinded by having known only one methodology of biblical interpretation. The Alexandrian school of exegesis one thousand years prior had inundated the Church with all kinds of allegorical and figurative interpretations of Scripture, which also carried over into the medieval age. The early Fathers themselves were deep into mystical meanings and biblical numerology. But when it came to interpreting Scripture's cosmology, not a one of them dared turn it into figurative expression. Something held them back from doing so, and we are confident to say that it was the Holy Spirit who guides the Church in her doctrinal proclamations.



Galileo tried his best to get around this immovable obstacle. At one point he reinvented how the Church should regard the testimony of the Fathers, saying we were bound...

...only to those conclusions which the Fathers discussed and inspected with great diligence and debated on both sides of the issue and for which they then all agreed to reject one side and to hold the other. However, the earth's motion and sun's rest are not of this sort, given that in those times this opinion was totally forgotten as far from academic dispute and was not examined, let alone followed, by anyone; thus one may believe that the Fathers did not even think of discussing it.... Therefore, it is not enough to say that all the Fathers accept the earth's rest, etc., and so it is an article of faith to hold it; rather one would have to prove that they condemned the contrary opinion. For I can always say that

their failure to reflect upon it and discuss it made them leave it stand as the current opinion, but not as something resolved and established.¹⁹⁶

Galileo was on his usual fishing expedition, but it happened to be in a poisoned lake. From treating the Fathers as being ignorant of astronomy, to claiming that because they didn't "debate" geocentrism, these things now allow us to depart from their consensus. He has tried every possible means to escape their holy grip on his fortunes. In actuality, the Fathers did little debating amongst themselves on any topic. Their writings were preponderantly concerning debates with and about heretics and apostates. They even titled many of their works against the heretics they fought (e.g., Irenaeus' *Against Heresies*, Augustine's *Against Manicheus*, Basil's *Against Eunomius*). Moreover, if the Fathers had been in debate amongst themselves it would have meant there was a controversy, and controversy creates doubt, and doubt leads to no consensus. But the reality is, the Fathers wrote over a span of about 600 years and from widely separated lands with very infrequent communications. Interestingly enough, with what little correspondence they could generate with one another, it is remarkable to see how much agreement they maintained over the doctrines of the Christian faith.

When it came to the issue of geocentrism, it was not, as Galileo would have it, that the Fathers just accepted this doctrine in a vacuum without any opposing propositions. Since Galileo hardly read the Fathers, he would have missed the frequent debates and admonitions they raised in their writing against the speculative science of the Greeks, including the push for evolution and heliocentrism in the Pythagorean school.

The only time the Church's leaders entered into intense debates was amongst themselves in sessions of an ecumenical council. But even then, what was resolved in the council chambers was that Catholics were obligated to adhere to the consensus of the Fathers. The obligation was reiterated at the Council of Trent, which was about sixty years prior to Galileo's proposals on how to regard the patristics. Rest assured, no council ever stated that Catholics should listen to the consensus of the Fathers only after they had strenuous debate over a certain topic. It was Trent's belief that the Holy Spirit was guiding the Church, and if she was guided in such a way that all her major theologians taught one belief, it was a sure sign that divine providence was at work.

Sentence: This Holy Tribunal being therefore of intention to proceed against the disorder and mischief thence resulting, which went on increasing to the prejudice of the Holy Faith, by command of His Holiness and of the Most Eminent Lords

Cardinals of this supreme and universal Inquisition,¹⁹⁷ the two propositions of the stability of the sun and the motion of the Earth were by the theological Qualifiers qualified as follows:

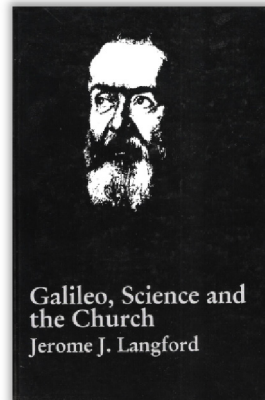
We note here that the Inquisition is understood as having “supreme” authority and “universal” jurisdiction. During this day and time when a close relationship existed between the civil magistrate and the ecclesiastical authorities, no one was exempt from the investigations and decisions of the Inquisition. This implies that, even though the decision against Copernicanism was directed against particular individuals (Foscarini, Galileo, Kepler, *et al.*), it applied to anyone in the world who might attempt to preach the same heliocentric doctrine. If such an attempt were made, another tribunal of the Inquisition would have been set up to deal with it. If a great number of individuals made such an attempt, the Church would most likely settle them all at once by making a formal and binding declaration to all the Christian faithful that no one is permitted to hold or teach that the Earth moves. Such a formal declaration is still a possibility. The passage of time, including the 380 years since the 1633 edict against Galileo, really has no effect on what may happen in the future. At any time it is so led, the Church could declare geocentrism as a formally infallible and binding doctrine on the whole Church. There are many examples of doctrines which, having been believed and practiced in the early centuries of the Church, were not formalized into dogmatic proclamations until hundreds or even thousands of years later (*e.g.*, transubstantiation, the canon of Scripture, justification, the Immaculate Conception of Mary, the Assumption of Mary). The unique quality of geocentric doctrine is that it possesses what the Church would consider the strongest possible evidence for declaring it a dogma of the Church. It has: (a) an indisputable consensus among the Fathers and medievals; (b) Scripture's exclusive testimony, in dozens of passages written in various ways, that declare the sun moves and the Earth is fixed; (c) high level magisterial decisions, enjoined, facilitated and authoritatively endorsed by several popes, that declare heliocentrism a formal heresy, opposed to Scripture, and a pernicious error. The only thing left to convince a doubting Thomas is the scientific evidence. With the very tools provided by modern science, we have already demonstrated that modern science has both no proof for heliocentrism and abundant evidence for geocentrism, facts which it is reticent to reveal to the public because of its admitted philosophical bias against doing so.

Sentence: The proposition that the sun is the center of the world and does not move from its place is absurd and false

philosophically and formally heretical, because it is expressly contrary to the Holy Scripture.¹⁹⁸

Here we see that even though Pope Paul V's 1616 injunction against Galileo did not use the word "heresy" that was recommended by the eleven cardinals who formed the papal investigatory commission, the term is here resurrected and applied in 1633, only this time it is increased to the level of being "formally" heretical, as opposed to, we assume, being only materially heretical. Note that the judgment is not directed merely against Galileo; rather, the entire "proposition" of a non-moving sun, no matter who may countenance such a belief, is declared "formally heretical." Hence, anyone who would adopt heliocentrism would automatically open themselves up to the judgment of formal heresy, based on this 1633 sentence. For more clarification on the canonical meaning of these terms, **Fr. Jerome Langford** elaborates:

The theologian Antonio of Cordova, writing in 1604, explains the generic meaning of these censures. The "formally heretical" in the first censure means that this proposition was considered directly contrary to a doctrine of faith. This shows that the apparent affirmations of Scripture and the Fathers, that the sun moves, was held by the Consultors to be a doctrine of faith. In other words, there is no room for apologetic excursions here. The Consultors tagged the proposition with the strongest possible censure, as being directly contrary to the truth of Sacred Scripture. In the second proposition, the motion of the earth was censured as "erroneous in the faith." This meant that the Consultors considered it to be not directly contrary to Scripture, but opposed to a doctrine which pertained to the faith according to the common consensus of learned theologians. In other words, Scripture was not as definite in stating the immobility of the earth. But the Holy Writ did reveal that the sun moved, and since human reason could conclude that the sun and the earth were not both moving around each other, the Consultors felt that the immobility of the earth was a matter which fell under the domain of faith indirectly, as a kind of theological conclusion.¹⁹⁹



Sentence: The proposition that the Earth is not the center of the world and immovable but that it moves, and also with a diurnal motion, is equally absurd and false philosophically and theologically considered at least erroneous in faith.²⁰⁰

A non-central, moving Earth, similar to a non-moving sun, is judged as “absurd” and “false philosophically.” The word “absurd” is employed because of the simple logic involved. If the sun moves around the Earth, then logically the Earth cannot move around the sun. It is a simple matter of choosing the right system. If A is right, it would be absurd to adopt B. “False philosophically” refers to the fact that the Pythagorean school of philosophy had adopted heliocentrism in opposition to the philosophical school of Aristotle. In medieval times, “philosophy” was a much more general term than its usage today.

Lastly, the change from “formally heretical” with regard to the movement of the sun, to “at least erroneous in faith” with regard to movement of the Earth seems a bit inconsistent but there is a reason for it. First, as noted earlier, the Church admitted that certain Scriptures might possibly be interpreted as referring to the stability of the Earth as opposed to its being immobile in space. As such, it would not be formally heretical to say that Psalm 104, for example, was speaking about Earth's longevity in time rather than its position in space. But since it was certain that the sun revolved around the Earth, it would still be “at least erroneous in faith” for one to claim that the Earth moved since obviously only one body can be revolving around the other.

Second, normally ecclesiastical censures will be issued at three distinct levels of severity: (a) heresy; (b) erroneous in faith; (c) rashness. The difference between (a) and (b) in the case of Galileo is that there was some doubt about whether Galileo actually held, at least in the absolute sense, to the concepts that he put in his *Dialogo*, since he sometimes gave the impression they were hypothetical. As such, Galileo is convicted for being “vehemently suspected of heresy” as opposed to being in actual heresy. This allows the sentence against him to maintain, on the one hand, that sun-fixed or earth-moving cosmologies are, *de facto*, “formally heretical,” and, on the other hand, allow room for judging whether the penitent really knew and believed what he was saying.

Coinciding with this principle is the phrase “vehemently” in the statement “vehemently suspect of heresy,” indicating the bare minimum of conviction that is assigned to Galileo and implying he is only a hair's breadth from being in the category of formal heresy. In any case, since Galileo was only suspected of heresy, he is then required to write a formal abjuration of his views, whereas if he were convicted of either “heresy” or “rashness” no abjuration would have been required.

Sentence: But whereas it was desired at that time to deal leniently with you, it was decreed at the Holy Congregation held before His Holiness on 25 February 1616,²⁰¹ that his Eminence the Lord Cardinal Bellarmine should order you to abandon altogether the said false doctrine and, in the event of your refusal, that an injunction should be imposed upon you by the Commissary of the Holy Office to give up the said doctrine and not teach it to others, not to defend it, nor even discuss it;²⁰² and failing your acquiescence in this injunction, that you should be imprisoned. And in execution of this decree, on the following day, at the Palace, and in the presence of his Eminence, the said Lord Cardinal Bellarmine, after being gently admonished by the said Lord Cardinal, the command was enjoined upon you by the Father Commissary of the Holy Office of that time, before a notary and witnesses,²⁰³ that you were altogether to abandon the said false opinion and not in future to hold or defend or teach it in any way whatsoever,²⁰⁴ neither verbally nor in writing; and, upon your promising to obey, you were dismissed.

The close involvement of Pope Paul V is duly noted, as well as the written legal injunction that is stated to have been given to Galileo by the Commissary of the Holy Office, not, as Galileo had claimed, verbally given to him by Cardinal Bellarmine. The proof that it was written is noted by the sentence's appeal to the "notary and witnesses" who would be required to sign their names to the injunction. The injunction specifies that Galileo was not to disseminate the heliocentric system "in any way whatsoever," which obviously included making theatrical musings of the opposing forces in the debate, as was the case in his *Dialogo*.

Sentence: And, in order that a doctrine so pernicious might be wholly rooted out and not insinuate itself further to the grave prejudice of Catholic truth,²⁰⁵ a decree was issued by the Holy Congregation of the Index prohibiting the books which treat of this doctrine and declaring the doctrine itself to be false and wholly contrary to the sacred and divine Scripture.²⁰⁶

Here we must realize that the pope and the Holy Office are not trying to dress up their convictions with a superfluity of convincing words; rather, they are expressing their deepest and most solemn concerns about an error they know in their heart of hearts could break the very foundations of Christianity, mainly because of the direct attack on the veracity and proper interpretation of Scripture that the Galileo affair would unleash upon mankind unless it were properly identified and summarily contained.

Like a dragon that must be cast into the bottomless pit and sealed over so that it cannot escape, so the magisterium of the 17th century, given the task by God himself to set the precedent for ages to come, viewed the “pernicious” doctrine of Galileo as one of the greatest threats ever to face the Church. Like a cancer waiting to metastasize, the doctrine of Galileo had to be “wholly rooted out” before it sucked the life out of the Church. As we have seen earlier in analyzing the Church’s subsequent decisions, the judgments against the heliocentric system as being “formally heretical” and “opposed to Scripture” have never been officially overturned, even though, by some sleight of hand concerning the dubious claims of stellar parallax in the 1830s and the falsehoods told to Pius VII and Gregory XVI and, which we will see later, put the two popes under duress.

Indeed, Copernicus and Galileo managed to get their books off the Index in 1835. The fact is, however, that the Index, although it is related to the injunction of 1616 and the sentence of 1633, is a separate document with its own life and death, as it were. As such, removing names from the Index does not dispense with the formal judgment that the magisterium made against the heliocentric theory itself. The sentence of 1633 makes clear that there are two separate but related issues at stake. The first deals with the fallacious tenets of heliocentrism itself; the second deals with what Galileo believed and taught and how he was to be censured. The sentence makes clear that there is no negotiation on the first issue, and on the second it decided to give a more lenient judgment. It is only the second of these issues that is up for discussion in the following years. The first issue has never come up for discussion again, save the commission John Paul II formed in 1981 and the informal address he subsequently gave to the Pontifical Academy of Science in 1992 but which made no official attempt to overturn previous magisterial decisions on the theological condemnation of heliocentrism.

Sentence: And whereas a book appeared here recently, printed last year at Florence, the title of which shows that you were the author, this title being: “Dialogue of Galileo Galilei on the Great World Systems: Ptolemy and Copernicus”; and whereas the Holy Congregation was afterwards informed that through the publication of the said book the false opinion of the motion of the Earth and the stability of the sun was daily gaining ground,²⁰⁷ the said book was taken into careful consideration, and in it there was discovered a patent violation of the aforesaid injunction that had been imposed upon you, for in this book you have defended the said opinion previously condemned and to your face declared to be so, although in the said book you strive by various devices to produce the impression that you leave it undecided, and in

express terms probable.²⁰⁸ which, however, is a most grievous error, as an opinion can in no wise be probable which has been declared and defined to be contrary to divine Scripture.²⁰⁹

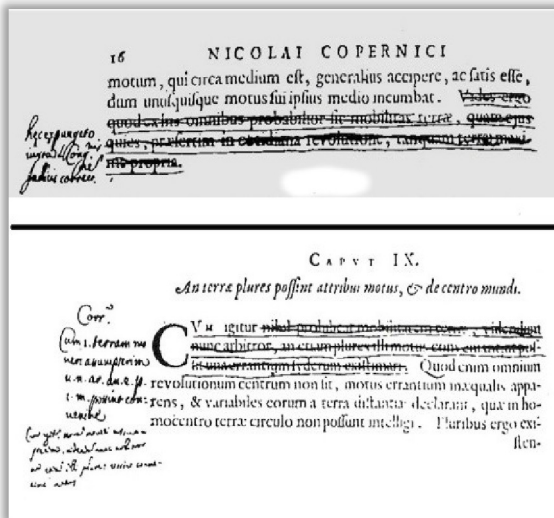
After “weighing every minutia, word for word” of Galileo’s book, the outcome was predictable, but the language used to condemn it was not. Here in the final sentence, which was approved by the pope, even the “probability” of heliocentrism is categorized as “an opinion declared and defined contrary to Divine Scripture.” This was the same argument that Cardinal Bellarmine had given Galileo in 1616 when he explained to him that, based on the veracity of Scripture and the consensus of the Fathers, not only did no person bring proof of heliocentrism, he did not believe that any person *could* do so.²¹⁰ Pope Urban’s 1633 judgment seems to go one step further than Bellarmine’s, for it declares that heliocentrism is not even to be considered probable, thus curtailing all claims to those having scientific proof to support it. In drawing this proverbial line in the sand the sentence uses language that is normally reserved for decisions that possess a very high degree of authority in dogmatic proclamations, that is, Urban VIII approves and facilitates language saying that heliocentrism is “declared and defined contrary to Divine Scripture.” When a controversial issue is “defined” it is more or less set in stone, unless a higher authority changes it. In that case, only a formal and universal statement given *ex cathedra* by Pope Urban, or a future pope, would have had higher authority to do so, and, needless to say, no such *ex cathedra* pronouncement has ever been made.

Sentence: Therefore by our order you were cited before this Holy Office, where, being examined upon your oath, you acknowledged the book to be written and published by you. You confessed that you began to write the said book about ten or twelve years ago [1621-1623], after the command had been imposed upon you as above; that you requested license to print it without, however, intimating to those who granted you this license that you had been commanded not to hold, defend, or teach the doctrine in question in any way whatever.

This means that Galileo, in his typical temerity, began writing the *Dialogo* just five to seven years after the injunction had been given to him in 1616. In fact, parts of the *Dialogo* were written as far back as 1610.²¹¹ The timing would put a dim light on Galileo’s 1633 excuse that he did not “recall” receiving the injunction from the Holy Office since a lapse of memory could hardly be the case for one of the most serious moments in his life. Perhaps with malice aforethought Galileo began writing the

Chapter 3 The Church's Case Against Galileo

Dialogo in hopes that the tide against him would someday turn. Or even more likely, Galileo got wind of the decision by the magisterium in 1620 to allow the publishing of Copernicus' book, *De revolutionibus*, if the proper corrections were added that would clearly make heliocentrism a hypothesis rather than give any hint that it was a scientific fact. Bellarmine had already suggested this approach both to Foscarini and Galileo, so it is not surprising that it was applied just a few years later²¹² in which on May 15, 1620, the "List of the corrections of the work *De revolutionibus orbium celestium* of Nicholas Copernicus" was released.



Official corrections to Copernicus' *De revolutionibus*

The sentence then reminds Galileo of the "certificate" given to him by Cardinal Bellarmine:

"the declaration made by His Holiness and published by the Holy Congregation of the Index had been announced to you, wherein it is declared that the doctrine of the motion of the Earth and the stability of the sun is contrary to the Holy Scriptures and therefore cannot be defended or held."²¹³ But this certificate produced by you in your defense has only aggravated your delinquency, since, although it is there stated that said opinion is contrary to Holy Scripture, you have nevertheless dared to discuss and defend it and to argue its probability,²¹⁴ nor does the license artfully and cunningly extorted by you avail you anything, since you did not notify the command imposed upon you.

We say, pronounce, sentence, and declare²¹⁵ that you, the said Galileo, by reason of the matters adduced in trial, and by you confessed as above, have rendered yourself in the judgment of this Holy Office vehemently suspected of heresy,²¹⁶ namely, of having believed and held the doctrine – which is false and contrary to the sacred and divine Scriptures – that the sun is the center of the world and does not move from east to west and that the Earth moves and is not the center of the world,²¹⁷ and that an opinion may be held and defended as probable after it has been declared and defined to be contrary to the Holy Scripture,²¹⁸ and that consequently you have incurred all the censures and penalties imposed and promulgated in the sacred canons and other constitutions, general and particular, against such delinquents. From which we are content that you be absolved, provided that, first, with a sincere heart and unfeigned faith, you abjure, curse, and detest before us the aforesaid errors and heresies²¹⁹ and every other error and heresy contrary to the Catholic and Apostolic Roman Church in the form to be prescribed by us for you.

Once again it is made clear that the notion of a moving Earth and a fixed sun is to be categorized as a “heresy,” and its opposition to Scripture is duly “declared and defined.” This is direct and unambiguous language. The only saving grace for Galileo is that his judgment is lessened to one who is “*vehemently suspected of heresy*” but only because the Holy Office cannot determine whether Galileo had deliberately gone against the will of the pope. In effect, the sentence decided two related but separate issues: (a) it made a formal declaration that heliocentrism is a “heresy,” and (b) it determined that Galileo’s condemnation falls just short of embracing that heresy. Irrespective of what happens to Galileo, the fact remains that the highest authority in the Church of that day – the Holy Office under the direction and approval of the reigning pontiff – had declared heliocentrism heretical. Although names of individuals and their books would eventually be removed from the Index, the formal declaration that heliocentrism is heretical has never officially been rescinded by any other pope or his Holy Office. The extent to which the Christian faithful are presently bound by this set of facts is something that must be decided by the magisterium.

Sentence: And, in order that this your grave and pernicious error and transgression may not remain altogether unpunished and that you may be more cautious in the future and an example to others that they may abstain from similar delinquencies, we ordain that

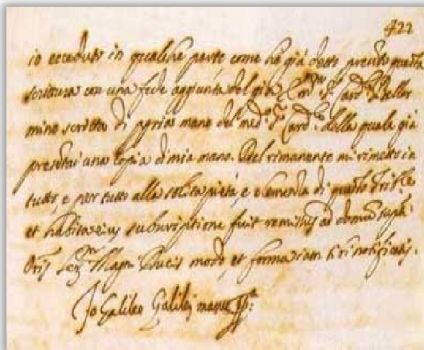
Chapter 3 The Church's Case Against Galileo

the book of the “Dialogue of Galileo Galilei” be prohibited by public edict.

We condemn you to the formal prison of this Holy Office during our pleasure, and by way of salutary penance we enjoin that for three years to come you repeat once a week the seven penitential Psalms. Reserving to ourselves liberty to moderate, commute, or take off, in whole or in part, the aforesaid penalties and penance.

And so we say, pronounce, sentence, declare, ordain, and reserve in this and in any other better way and form which we can and may rightfully employ.²²⁰

On June 22, 1633, because he was “vehemently suspected” of holding the “formal heresy” that the sun was fixed and the Earth moved, the pope required Galileo to renounce his views and write a detailed abjuration. He writes as follows:



I, Galileo, son of the late Vincenzo Galilei, Florentine, aged seventy years, arraigned personally before this tribunal and kneeling before you, Most Eminent and Reverend Lord Cardinals Inquisitors-General against heretical pravity throughout the entire Christian commonwealth

having before my eyes and touching with my hands the Holy Gospels, swear that I have always believed, do believe, and by God's help will in the future believe all that is held, preached, and taught by the Holy Catholic and Apostolic Church....²²¹

Urban then sent a formal letter to the inquisitors and papal nuncios of Europe announcing Galileo's abjuration and requiring them to heed the Vatican's condemnation of Copernicanism.²²² One important fact that should not be overlooked in understanding the sternness of Urban's judgment against Galileo is that in 1616 when the pope was a cardinal (Maffeo Barberini), he had opposed the decree against Galileo that was issued under the aegis of Pope Paul V, and actually attempted to intervene on Galileo's side. In 1620, Barberini had written an ode in honor of Galileo titled *Adulatio Perniciosa* (“Perilous Adulation”). When he

became pope in 1623, a year later he paid homage to Copernicus in an audience with Cardinal Hohenzollern remarking that heliocentrism would not be condemned as heretical, only as rash.²²³ Barberini also lavished Galileo with favors, gave a pension for his son, as well as an expensive painting and medals of gold and silver. When in May 1630 Galileo came to Rome with his book titled *Dialogue on the Flux and Reflux of the Tides*, it was Urban VIII who suggested that he retitle the book *Dialogue on the Two Great World Systems*, although he had not read the book.²²⁴ But Pope Urban, as we noted in stark detail, did a 180-degree turn against his former opinion. Not only was “rash” not chosen as a final judgment, in 1633 Urban revived the title of “heresy” against Copernicanism left over from the 1615 papal commission, and then added the adjective “formal” to specify its severity. Although from a human perspective there is a temptation to attribute Urban’s change of mind to what some suspect was his understanding of being ridiculed as a simpleton in Galileo’s *Dialogo*,²²⁵ from a divine perspective it can safely be concluded that Urban, despite whatever vainglory with which his human character had been flawed, was being guided from above to answer one of the most serious threats the Church had ever faced.



“...all this evidence that the universe looks the same whichever direction we look in might seem to suggest there is something special about our place in the universe. In particular, it might seem that if we observe all other galaxies to be moving away from us, then we must be at the center of the universe....²²⁶ There is, however, an alternate explanation: the universe might look the same in every direction as seen from any other galaxy, too. This, as we have seen, was Friedmann’s second assumption. We have no scientific evidence for, or against, this assumption. We believe it only on grounds of modesty: it would be most remarkable if the universe looked the same in every direction around us, but not around other points in the universe.”

Physicist, Stephen Hawking²²⁷

"Here we come in contact with the really critical issue of the modern age. The concept of truth has been virtually given up and replaced by the concept of progress. Progress itself "is" truth. But through this seeming exaltation, progress loses its direction and becomes nullified. For if no direction exists, everything can just as well be regress as progress. Einstein's relativity theory properly concerns the physical cosmos. But it seems to me to describe exactly the situation of the intellectual/spiritual world of our time. Relativity theory states there are no fixed systems of reference in the universe. When we declare a system to be a reference point from which we try to measure a whole, it is we who do the determining. Only in such a way can we attain any results at all. But the determination could always have been done differently. What we said about the physical cosmos is reflected in the second "Copernican revolution" regarding our basic relationship to reality. The truth as such, the absolute, the very reference point of thinking, is no longer visible. For this reason, precisely in the spiritual sense, there is no longer "up or down." There are no directions in a world without fixed measuring points. What we view to be direction is not based on a standard which is true in itself but on our decision and finally on considerations of expediency. In such a relativistic context, so-called teleological or consequentialist ethics ultimately becomes nihilistic, even if it fails to see this. And what is called conscience in such a worldview is, on deeper reflection, but a euphemistic way of saying that there is no such thing as an actual conscience, conscience understood as a "co-knowing" with the truth. Each person determines his own standards. And, needless to say, in general relativity, no one can be of much help to the other, much less prescribe behavior to him."

Cardinal Joseph Ratzinger
CONSCIENCE AND TRUTH

Presented at the 10th Workshop for Bishops February 1991 Dallas,
Texas

Chapter 4

Galileo Converts to Geocentrism

Unbeknownst to almost every modern reader, and even most historians, is the fact that just one year prior to his death Galileo made it very clear to his former allies where he now stood on the subject of cosmology. On the 29th of March 1641, Galileo responded to a letter that he received from his colleague Francesco Rinuccini, dated the 23rd of March 1641, containing discoveries made by the astronomer Giovanni Pieroni concerning the parallax motion of certain stars, from which both Rinuccini and Pieroni believed they had uncovered proof of the heliocentric system. Rinuccini writes to Galileo:

Your Illustrious Excellency, Signor Giovanni Pieroni has written to me in recent months telling how he had clearly observed with an optical instrument the movement of a few minutes or seconds in the fixed stars, but with just that level of certainty that the human eye can attain in observing a degree. All this afforded me the greatest pleasure - witnessing such a conclusive argument for the validity of the Copernican system!"²²⁸

Galileo, not being particularly moved by the assertions, writes this surprising response to Rinuccini:

The falsity of the Copernican system should not in any way be called into question, above all, not by Catholics, since we have the unshakeable authority of the Sacred Scripture, interpreted by the most erudite theologians, whose consensus gives us certainty regarding the stability of the Earth, situated in the center, and the motion of the sun around the Earth. The conjectures employed by Copernicus and his followers in maintaining the contrary thesis are all sufficiently rebutted by that most solid argument deriving from the omnipotence of God. He is able to bring about in different ways, indeed, in an infinite number of ways, things that, according to our opinion and observation, appear to happen in one particular way. We should not seek to shorten the hand of God and boldly insist on something beyond the limits of our competence.... D'Arcetri, March 29, 1641. I am writing the enclosed letter to Rev. Fr. Fulgenzio, from whom I have heard no news lately. I entrust it to Your Excellency to kindly make sure he receives it."²²⁹

Chapter 4 Galileo's Conversion to the True Catholic Faith

Search as one might, few today will find Galileo's retraction of Copernicanism cited in books or articles written on the subject of his life and work.²³⁰ Fewer still are those in public conversation about Galileo who have ever heard that he recanted his earlier view. The reason is, quite simply, that the letter has been obscured from the public's eye for the last four centuries. Fortunately, Galileo's retraction managed to escape censorship and find its way among the rest of his letters in the twenty-volume compendium *Le Opere di Galileo Galilei* finally published in 1909 with a reprint in Florence in 1968. Centuries prior to its publication, there was a concerted effort by either Rinuccini or someone behind the scenes to cover up the fact that the letter was, indeed, written and sent by Galileo. We know this to be the case since a rather obvious attempt was made to erase Galileo's name as the signatory of the letter. The compiler of the original letter makes this startling notation: "The **signature 'Galileo Galilei'** has been very deliberately and repeatedly rubbed over, with the manifest intention of rendering it illegible."²³¹



Stillman Drake, one of the top Galileo historians, noticed the subterfuge and commented:

Among all Galileo's surviving letters, it is only this one on which his name at the end was scratched out heavily in ink. I presume that Rinuccini valued and preserved Galileo's letters no matter what they said, but did not want others to see this declaration by Galileo that the Copernican system was false, lest he be thought a hypocrite.²³²

Judging from the contents of his letter to Rinuccini, for quite some time it seems that Galileo had been contemplating the problems inherent in the Copernican system, as well as his desire to convert back to an Earth-centered cosmology. The wording in his letter is rather settled and direct, as it does not reflect someone who is confused or equivocating. It holds the convictions of a man who has been swept off his feet by a more convincing position.

Chapter 4 Galileo's Conversion to the True Catholic Faith

These carefully chosen words are not merely an attempt to point out the difficulties in the Copernican system prior to Kepler's discovery of the elliptical orbits of the planets. Rather, Galileo's words are identical to those of St. Robert Bellarmine stated some twenty-five years earlier, when the heliocentric system was first condemned under Pope Paul V and the Holy Office because it attempted to put the Earth in motion against the solemn words of Holy Scripture. Whereas in 1616 Galileo was arguing that Scripture should *not* be taken literally when it spoke on cosmology, now, in 1641, Scripture's literal interpretation is Galileo's hammer, just as it was for Bellarmine.

That Galileo is renouncing the entire foundation of heliocentric cosmology is noted both in his unqualified acceptance of the "stability of the Earth, situated in the center, and the motion of the sun around the Earth," and his reference to "the conjectures of Copernicus *and other followers*," of whom Kepler, having been the first astronomer publicly to endorse Copernicus, was indeed one of his most ardent "followers," and one to whom Galileo was in correspondence on brief occasions. Not only is Galileo condemning Copernicanism by indicating that it is contrary to Scripture, he reinforces his line of reasoning by arguing that "the omnipotence of God" is "able to bring about in different ways, indeed, in an infinite number of ways" things we regard as improbable or impossible. Galileo concludes his letter to Rinuccini by two other revealing statements. In the first, Galileo asserts that he can discredit the findings of Pieroni by an *a priori* assumption – that the Earth is in the center of the universe; and in the second, by renouncing his "unfortunate Dialogue" – the now famous book, titled more fully *The Dialogue Concerning the Two Chief World Systems* that Pope Urban VIII and the Sacred Congregation condemned in 1633 for its unqualified support of heliocentrism.

Galileo's Conversion to the True Catholic Faith



The question arises whether it was merely a scientific conviction that led Galileo to change his mind toward geocentrism or was something more serious and personal involved. We get a strong indication of the latter from the research of **David Wootton** in the 2010 book, *Galileo: Watcher of the Skies*.

Wootton is not shy about painting the darker side of Galileo's life. For example, after remarking on how badly Galileo treated two of the three children he fathered with Marina Gamba, Wootton gives substantial evidence that Galileo fathered a fourth child out of wedlock around 1610. Her name was Anna, given by

her mother Cassandra, although nothing further about the latter is forthcoming. Benedetto (which is also the same name of Galileo's best friend, Benedetto Castelli) was the son of Anna and who "was, it seems, the spitting image ('il vero ritratto') of Galileo."²³³ Wootton also tells us about the affair between Galileo and Alessandra Buonamici who was married to a bed-ridden husband and wished to leave him for Galileo but which circumstances did not allow.²³⁴ Wootton also reveals how Galileo blatantly plagiarized the work of Scheiner regarding the movement of sunspots, which Galileo then used to argue that the Tychonic geocentric system required the sun to change its angle of orientation, something not required of the Copernican heliocentric system.²³⁵ This data on sunspots was quickly added to the *Dialogo*, almost word-for-word from Scheiner's manuscript.

As Wootton adds up all the sordid details of Galileo's life, he comes to the conclusion that Galileo was not a true Catholic at all. In a chapter titled "Galileo's (un)belief," Wootton pulls no punches in saying that "If agreeing with the fundamental teachings of the Church is what counts, then neither Galileo nor Mme de Warens was a Catholic at all.... These three types of evidence establish, I think, a very strong presumption that Galileo was not a Christian, nevertheless they are not conclusive,"²³⁶ and then Wootton says, "In later work, Redondi has made clear that he shares the general consensus that Galileo was a believing Christian, if not an orthodox one. This consensus, in my view, is simply mistaken."²³⁷ Wootton then reveals the likely motivation for Redondi's sentiment:

In the case of Galileo, where generations of scholars, particularly liberal Catholic scholars, have wanted to portray him as an innocent victim, whose genuine faith ought to have been a protection against any condemnation for heresy, there is now an enormous cultural investment in the idea of him as a good Catholic. Vivani was remarkably successful in establishing an account of Galileo's commitment to Catholicism which has survived largely unchallenged for more than three centuries.²³⁸

Elaborating on this theme, Wootton writes:

Urban VIII regarded the argument of the *Dialogue* as not only disloyal but impious. Here, as elsewhere, his judgment was sound. Galileo always acknowledged the authority of the Church, and always claimed to be a pious Catholic. But a distinction needs to be drawn between his official position and his private convictions. In the twenty volumes of his works there is a very striking absence of evidence suggesting any private

Chapter 4 Galileo's Conversion to the True Catholic Faith

piety. Reading his letters, there is no sign—or almost no sign—of his saying his prayers, listening to sermons, or reading either the Scriptures or the fathers of the Church. There is no indication that he believed in sin, contrition and redemption. He avoids all mention of Jesus. Galileo was no Christian: we can see well enough behind the public persona to be fairly sure of this, and we have the confirmatory testimony of Castelli.

Portraying Galileo more like a medieval Carl Sagan, Wootton adds:

Galileo's Copernicanism, his scientific method and his unbelief were, indeed, mutually supporting: all three represented a rejection of the traditional view that the world was made for man, and that man was made in the image of God. Rather, Galileo argued, we need to recognize that the world is profoundly imperfect, that we can understand only fragments of it, and that humankind appears irrelevant to its purposes, supposing it has any. Galileo sought to live with the idea that we do not know what the universe is for, even though certain aspects of it suggest that it was designed for a purpose.²³⁹

Galileo sought to escape from a world in which his mother loomed too large by discovering the insignificance of humankind: far from being at the center of a universe built especially for them, human beings were insignificant creatures within the vast expanses of an inhuman cosmos.²⁴⁰

Indeed he offered a view of the cosmos in which humankind, and the things that matter to humankind—love and hatred, virtue and vice, mortality and immortality, salvation and damnation—were irrelevant. Far from embodying a scheme of values, far from embodying a *telos* or purpose, Galileo's universe appeared to be indifferent to moral and metaphysical issues, and even indifferent to our own existence. It is not hard to sympathize with those who recoiled from this new vision.²⁴¹

Above all, there is no evidence prior to 1639 that Galileo believed that Christ died to save our souls from damnation.²⁴²

As is true with many scientists who lead a life of sin, they attempt by means of science to eliminate God from the picture. Often they are driven by a subconscious need to relieve their guilt. Pretending God doesn't exist is one such way to do so. Wootton then says:

Chapter 4 Galileo's Conversion to the True Catholic Faith

...Galileo's central but unspoken claim was that if one had a proper idea of nature then one could dispense with the Christian idea of an omnipotent, providential God who had created the universe and would judge the souls of men and replace it, on the one hand, with a Platonic idea of God as the Supreme Mathematician, indifferent to the affairs of men, and on the other hand, with nature as the *anima mundi*.²⁴³

...Galileo's view of movement is compatible with the idea of an eternal universe, and that if the universe is eternal, one can dismiss all arguments from the first cause or the first mover, get rid of God and become an atheist.²⁴⁴

Wootton concludes:

My account of Galileo in this book has been novel in three significant respects: I have emphasized his early Copernicanism, his reluctant empiricism and his private irreligion. I have also stressed his extraordinary intellectual ambition, his enormous vanity and his capacity for self-destruction: Galileo was no secular saint, although he was capable of pretending that he was.²⁴⁵

But that was then, and this is now. As Wootton makes a strong case that Galileo was as unchristian as Koestler maintained, he also reveals a stunning reversal in Galileo's life – that he became a true Catholic around 1639, three years before his death. This event, of course, would explain why Galileo told Rinuccini in 1641 that he no longer accepted the Copernican system and now believed that God could easily make the universe with the Earth motionless in the center. It was on June 7, 1639 that...

Benedetto Castelli, Galileo's old friend, former pupil and long-time intellectual companion, wrote to him from Rome. They had known each other for at least thirty years. They were so close that in 1620 Cavalieri had assumed that anything written to one of them would be known by the other. Each had reason to trust the other completely. And in questions concerning the religion of Galileo we can trust Castelli...²⁴⁶

Castelli has heard news of Galileo that has made him weep with joy, for he has heard that Galileo has given his soul to Christ. Castelli immediately refers to the parable of the laborers in the

vineyard....he turns to the crucifixion, and in particular to the two thieves crucified on either side of Christ.

Castelli's invocation of the parable...and two thieves...is clear and unambiguous. He believes Galileo is coming to Christianity at the last moment, but not too late to save his soul. There is no conceivable interpretation of this letter which is compatible with the generally held view that Galileo was, throughout his career, a believing Catholic. It will not do, for example, to suggest that Galileo had previously been a believer, but had been lax in the practice of his religion.

Castelli allows himself to discuss Galileo's unbelief only because he has been given to understand that he is now, at long last, a believer. There are no further letters like this one....Castelli's letter cannot tell us what really happened to Galileo in May 1639; but what is clear is what Castelli had always understood about his close friend: that he was no believer. And if anyone was in a position to know if Galileo was or was not a believer it was Castelli.²⁴⁷

As Wootton noted earlier that, "liberal Catholic scholars have wanted to portray him [Galileo] as an innocent victim" and have an "enormous investment in the idea of him as a good Catholic," and "accept without question the claims made on behalf of modern science," one of Wootton's final comments is apropos: "Rethinking Galileo's (un)belief is an important step towards re-examining current orthodoxies regarding the intellectual and cultural origins of the scientific revolution."²⁴⁸ Since the time of Copernicus, modern scientists have been on a quest to eliminate God from the cosmos and turn it into a self-existent and self-perpetuating machine. The main reason, as we have seen, is to rid themselves of the guilt of their sin.

In the end, although we are grateful to Wootton for taking a stand against the rosey picture of Galileo foisted on the public for the last three centuries, his book does not contain the account of Galileo's stated rejection of Copernicanism in 1641, which seems odd considering Wootton is the first to reveal Galileo's conversion to true Catholicism. We don't know the reason for Wootton's omission here, but it may have something to do with the fact that he still believes that the discovery of stellar parallax was when "the movement of the earth was first reliably demonstrated," and that the Foucault Pendulum "allows one directly to see the earth moving."²⁴⁹

"The main source of the present-day conflicts between the spheres of religion and of science lies in this concept of a personal God."

Albert Einstein²⁵⁰

"The Lord God is subtle, but malicious he is not."

Albert Einstein²⁵¹

"I have second thoughts. Maybe God is malicious."

Albert Einstein²⁵²

"A conflict arises when a religious community insists on the absolute truthfulness of all statements recorded in the Bible."

Albert Einstein²⁵³

"We, however, who extend the accuracy of the Spirit to the merest jot and tittle, will never admit the impious assertion that even the smallest matters were dealt with haphazardly by those who have recorded them."

Gregory of Nazianzus²⁵⁴

"If God had spoken scientifically, even an Einstein would not have understood him."

Walter van der Kamp²⁵⁵

Chapter 5

Subsequent Popes' Dealing with the Galileo Issue

Pope Alexander VII's 1664 *Index of Forbidden Books*

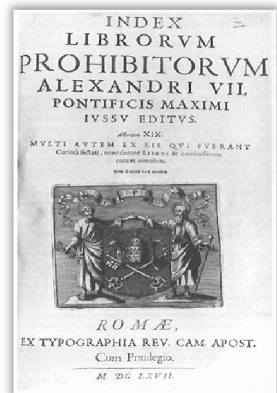
Thirty-one years after Pope Urban VIII and his Sacred Congregation of the Index condemned heliocentrism as “formally heretical” and “erroneous in faith,” on March 5, 1664, Pope Alexander VII attached condemnations of the works of Copernicus, Galileo, and Kepler to a papal bull appropriately titled *Speculatores domus Israel* (“Watchman over the House of Israel”), signed by the pope himself and which declared that the *Index of Forbidden Books* was part of the papal bull and thus bore his direct papal authority. In this way, the pope’s decree against books teaching heliocentrism was in the *forma specifica* venue, one of the higher magisterial vehicles for the dissemination of papal



authority. The pope also mentions past decrees against heliocentrism, which implies that the decree of 1633, which stated that heliocentrism was “formally heretical” and “erroneous in faith,” were personally and canonically confirmed by Alexander VII. Needless to say, this authoritative bull was the chosen means the pope determined to be a “Watchman” for the Church, to protect it from heretical and erroneous ideas that would damage the faith of its people. Here is an English translation of two paragraphs of the papal bull with important parts underlined for emphasis:

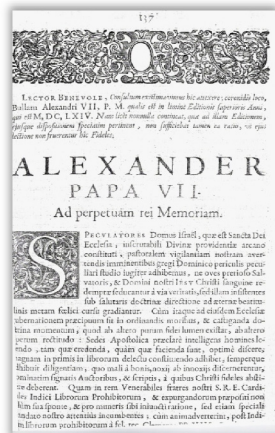
Alexander VII's Bull: *Speculatores Domus Israel*

Having been constituted, in the mysterious designs of divine Providence, as watchman over the house of Israel, that is, the holy Church of God, We continually strive with particular zeal to exercise Our pastoral vigilance by alerting the Lord’s flock to imminent dangers, so



Chapter 5: Subsequent Popes' Dealing with the Galileo Issue

that the sheep redeemed by the precious blood of our Lord and Savior Jesus Christ shall not be seduced from the path of truth, but rather, may continue their happy journey toward the goal of eternal blessedness by persevering in that path under the guidance of salutary doctrine.



1. Thus, it is of very great importance in the governance of the Church to teach sound morality and to condemn false doctrines; for the former activity promotes upright conduct, while the latter enables the pure light of faith to shine forth. The Apostolic See, therefore, realizing clearly that reading is an excellent way for men to learn what they should believe and how they should behave,

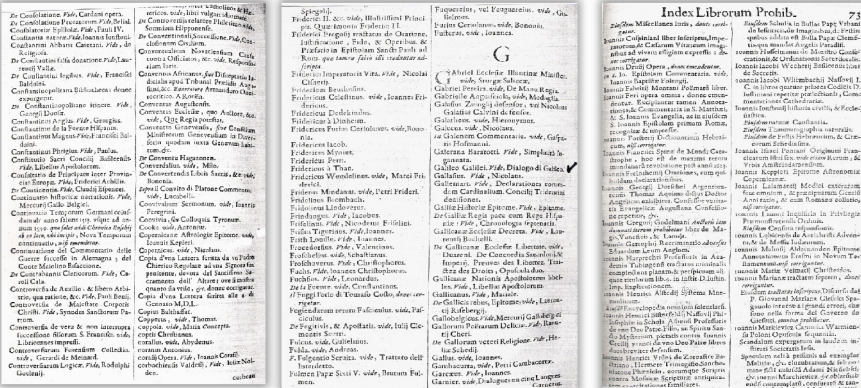
exercises – as it has always exercised – a particularly alert vigilance in laying down norms for the reading of books. For by means of these norms – designating by name authors and writings which faithful Christians should abstain from reading – discernment is effected between good and evil literature, that is, between harmless and harmful books.

2. In this matter, Our venerable brethren the cardinals of the Holy Roman Church who have been appointed to supervise the Index of books deserving prohibition (in whole or in part), have been devoting their attention – not only by their own will and initiative, but also in attentive obedience to Our own special command – to the following problem. After Our predecessor of happy memory Pope Clement VIII promulgated an Index of forbidden books that followed the form of the earlier Index ordered by the holy Council of Trent, many more books were prohibited, and their authors condemned, both by the Roman Pontiffs who succeeded the said Pope Clement and by their congregation of cardinals. Nevertheless, there has been no officially compiled and published catalog setting out in a clear and well-ordered manner all these prohibited books and condemned authors, with the result that great confusion has arisen regarding this matter – confusion that will only keep increasing in the future unless opportune provisions are made.

Within the Index attached to the bull there are separate pages of condemnation for the books of Copernicus, Galileo, and Kepler.

Chapter 5: Subsequent Popes' Dealing with the Galileo Issue

Pages from Pope Alexander VII's Index of Forbidden Books



Copernicus, page 30

Galileo, page 52

Kepler, page 73

The First Index of Benedict XIV

After the 1664 papal bull of Alexander VII, the next official declarations concerning the aftermath of Galileo affair occurred in 1741 and 1758 when under the reign of **Pope Benedict XIV** (1740-1758) the Holy Office granted an imprimatur to the first edition of the complete works of Galileo in addition to omitting the general prohibition of Copernican books for the new *Index*.

The imprimatur was granted under the condition that the stipulations of the Padua Inquisitor, Paolo A. Ambrogio, be observed. The result was that the publication in 1744 had to exclude Galileo's *Letter to Christina* and the *Letter to Castelli*, which were two of Galileo's most formidable defenses of Copernicanism. Furthermore, Galileo's *Dialogue of the Two Great World Systems* had to be printed in Volume IV and accompanied by the 1633 sentence against Galileo (i.e., "vehemently suspected" of "formal heresy"), as well as the text of Galileo's abjuration. The most important feature of the re-publication was that it was required to contain a preface emphasizing that the "hypothetical" character of the book's contents. This requirement shows the consistency of the Church's position, for the same permission was granted to the works of Copernicus in 1620.



The crucial point to be made here is this: although the Church of 1616 did not have the evidence of stellar aberration or parallax available to the Church of 1742, nevertheless, both ecclesiastical authorities allowed Copernicanism as a hypothesis, since both agreed that Scripture provided the only correct interpretation of celestial events – a fixed earth within a rotating universe, not vice-versa. This historical fact may be the watershed of the whole controversy, since at no time after the Church's 1616 decision to allow Copernicanism as a hypothesis did the Church ever rescind that allowance or permit more than that allowance. Today, as far as the Catholic Church is concerned, modern astronomers can speak and write about Copernicanism with relative freedom, provided they understand that, in the legal forum of the discussion, the Church still maintains that geocentrism is the only official interpretation the Church has ever, or will ever, accept as the correct one, and that all other models are mere hypotheses that can never be regarded as true. The simple reason is: several hypotheses can coexist in theory, but there can only be one true system in reality.

The Second Index of Pope Benedict XIV, 1758

Regarding the Index of 1758, no *carte blanche* permission was given to Copernican cosmology; rather, the decree contained precautionary and limiting stipulations very similar to the 1741 decision. We can understand these stipulations if we reflect on the prohibitions in the 1619 edition of the *Index*. It, as well as subsequent editions, had two categories of prohibitions for Copernican works: specific works and general works. The edition of 1758 excluded only the general. Still included were Copernicus' *De Revolutionibus*, Galileo's *Dialogo* and Kepler's *Epitome*, obviously intending to give no endorsement to Copernican cosmology.

In light of its conclusion, the events that led to the 1758 decision are important to know. In July 1753, Pope Benedict XIV issued a bull titled *Sollicita ac Provida* directing reforms of the criteria for publications that would be prohibited by the *Index of Forbidden Books*. In January 1754, Agostino Ricchini, secretary to the Congregation of the Index, inquiring to the pope for additional reforms, desired to remove the ban on various books if proper corrections were made to them.²⁵⁶ Among the examples he cited were works by Descartes, Copernicus and Galileo. Without much ado, Benedict XIV approved Ricchini's request on February 12, 1754. The important point that cannot be missed in this simple transaction is that the basis upon which any changes to the Index were approved, or any prohibitions of the heliocentric system were relaxed, centered consistently upon the stipulation that the proposed book must contain the "proper corrections," namely, that the use of the Copernican system not be

promoted as a thesis, but only as a hypothesis. Hence, on that specific basis, on April 1757, with the apparent approval of Benedict XIV, the Congregation of the Index eliminated the prohibition concerning “all books teaching the earth’s motion and the sun’s immobility,”²⁵⁷ and thus the new *Index* was published in 1758, although it still included the prohibition against Copernicus, Foscarini, Zúñiga, Kepler and Galileo, most likely because they stood “uncorrected” in their present form.

Pietro Lazzari Attempts to Exonerate Galileo

In any case, the decision to continue the censure of Copernicus, Foscarini, Zúñiga, Kepler and Galileo, became all the more significant in the face of the initial arguments put forth by the Jesuit consultant, Pietro Lazzari, professor of church history at the Roman College, to remove the general prohibition. Lazzari tries to convince the Congregation of the Index by first citing all the modern astronomers who hold to heliocentrism. The pressure his words put upon the Congregation were unprecedented. It seems his objective was to make them appear foolish if they did not accept the heliocentric system as a thesis. He writes:

...I now come to the second point and reflection: that not one of these reasons, and still less the whole set, remains nowadays to retain the clause [“all books teaching the earth’s motion and the sun’s immobility”]. First, then, the opinion of the earth’s motion is prevalent in the principal academies, even in Italy, and among them most celebrated and competent physicists and mathematicians. Second, they explain Scripture in the sense that is proper and most literal. Third, they advance a kind of demonstration in their favor.

....Soon after our decree or thereabouts [1633], this opinion [of heliocentrism] began to get established, mostly through the work of Kepler...Bacon of Verulam also said...that in his time the opinion was beginning to spread and expand. In book 1 of *Kosmotheoros*, Christiaan Huygens asserted: “Nowadays all astronomers, except those who are of a retarded mind or whose beliefs are subject to the will of men, accept without doubt the motion of the earth and its location among the planets.”²⁵⁸ This is even more true today after the discoveries of Newton or those made with the benefit of his system. It is enough to read the proceedings and journals of academies, even Catholic ones, and the works of the most celebrated philosophers and mathematicians, or even dictionaries and similar books that

report on the most widely accepted opinions. And indeed, in the article on Copernicus in the *Encyclopedia, or Reasoned Dictionary of the Sciences*, the famous mathematician D'Alembert writes: "Nowadays this system is generally followed in France and England, especially after Descartes and Newton each tried to confirm it by means of physical explanations....It would be desirable that a country as full of intelligence and learning as Italy recognize an error so harmful to scientific progress and that she think of this subject as we do in France! Such a change would be worthy of the enlightened pontiff who governs the Church nowadays. Friend of the sciences and himself a scholar, he ought to legislate to the inquisitors on this subject, as he has already done for more important subjects....In France one supports the Copernican system without fear...."²⁵⁹

To put as much pressure on the Congregation of the Index as he could muster, Lazzari adds an arsenal of heliocentric supporters, quoting from the 1749 *Chambers's Universal Dictionary*: "According to the Copernican hypothesis, which now seems generally accepted and even has a demonstration [Bradley's stellar aberration] the sun is at the center of the system of planets...and our earth among them revolve around it in different periods..." and the 1750 *Philosophical Grammar of the Sciences*, which, speaking of geocentrism, says: "We have not reason to believe it; instead we have some demonstrations to the contrary." He cites Fr. Paolo Frisi's *Dissertation on the Diurnal Motion of the Earth*, which was granted an "imprimatur of the general of his order; and it was signed 'Rome, at the ex college of Saints Blaise and Charles, 24 January 1756' and was based on the reports of two of his theologians." He continues:

Here in Rome itself we can find that this is true. I have frequently had occasion to speak with the two celebrated mathematicians of the order of St. Francis of Paola, with Fathers Boscovich and Maire....I can attest that this is also their opinion. And the said Father Boscovich, who has tried to reconcile the modern discoveries with the earth's rest, has told me several times that he regards his reconciliation and the earth's rest most improbable from the point of view of pure natural reason, and that to believe this it is necessary to bind the intellect in deference to Faith.

Lazzari also marginalizes geocentrists as those who "now deny the system of the moving earth with the most fervor and commitment are either strange in their other opinions, or barely educated in their basic

elements of geometry and mechanics,” while citing what he believes are the various proofs of heliocentrism: “To name a few items, such are the laws of the aberrations of the moon...the motion of fixed stars, called aberration of starlight; the nutation of the equatorial axis; the laws of the tides; the motions of comets; *etc.*,” all of which, we might add, have been shown by modern science to be totally inept at proving heliocentrism.

Lazzari also tried his hand at convincing the Congregation of the Index by an appeal to the proper interpretation of Scripture based on two ways of viewing motion, claiming that “the defenders of the Copernican system...believe that while defending such a system they can keep a sense that is more proper and natural than any other.” His argument is:

We must distinguish two kinds of motion and rest. The first is absolute; involves what is called imaginary space; and is not subject to any sensation. The other is relative to the bodies that are involved and that determine location, which is also called relative. Thus, when a ship is in motion, whoever is sitting astern moves with absolute motion and stands still at rest relative to the ship. Now, absolute motion is the one that is the subject of the reflection of philosophers since it is not possible to apprehend it with any sensation; relative motion is the only one that is the subject of common sense. Thus, civil society has coined the words “motion” and “rest” to express, in accordance with the common usage of words, relative motion and relative rest. And in accordance with this common manner of speaking, this meaning is not improper but really most proper....Thus, if Sacred Scripture is construed in this manner when it speaks of the motion of the sun and the rest of the earth, namely as meaning relative motion and rest, in relation to us and the place where we are, exactly as in that ship, then I am construing it in a sense that is proper, obvious, natural, and in harmony with the common definition of words.

Quite ingeniously, Lazzari then refers to the same argument to which many appeal today – the “center of mass” discovered by Newton:

For in truth modern philosophers and astronomers do not regard it [the sun] as immobile at all, as they did; that is, they supposed its center to be immobile, and at most supposed it only moving around its own axis. After Newton, the moderns generally regard as immobile only the common center of gravity of the sun and all planets and comets; and they think that the sun as well as the earth and the planets turn around this center, although the sun

has such a greater mass and is so much closer to the said center that it moves much less than all the other planets. But there is no need to linger on this....That is, nowadays the principle foundation of the prohibition ["all books teaching the earth's motion and the sun's immobility"] no longer subsists..."

As we know today, Lazzari's arguments advocating Newton's "common center of gravity" cannot be used to support heliocentrism. Modern astronomy now holds that the sun and Earth are not isolated bodies in the universe; rather, at the least, the sun is pulled by the gravity of the Milky Way and thus revolves around the galaxy's center in order to escape its gravity. Since these stars, which are thousands of light-years away, duly affect our solar system with such strong force, it has become naive and specious for anyone nowadays to insist that we are required to limit ourselves to the two-body system of the sun and the Earth in order to determine what revolves around what. In short, it can no longer be claimed that heliocentrism is proven by Newton's laws of motion. From the perspective of the entire universe, the center of mass depends on far more than the sun and the Earth. According to Newton himself, if the universe's masses are properly distributed, the Earth itself could serve as the center of mass.²⁶⁰ Indeed, for the Earth to be the center of mass, it alone would be stationary among all the celestial bodies, for according to Newton, the center of mass for the universe must be motionless.²⁶¹ Unfortunately, scientists of Lazzari's time were adept at playing the 'Newton card' to silence geocentrists, but as it turns out, it is not a trump card but only a joker that deceived many into thinking that Galileo was right. Indeed, if there ever existed a scientific discovery that catastrophically backfired on its proponents, this was it. As modern cosmologist Fred Hoyle admits:

Although in the nineteenth century this argument was believed to be a satisfactory justification of the heliocentric theory, one found causes for disquiet if one looked into it a little more carefully. When we seek to improve on the accuracy of calculation by including mutual gravitational interactions between planets, we find – again in order to calculate correctly – that the center of the solar system must be placed at an abstract point known as the "center of mass," which is displaced quite appreciably from the center of the Sun. And if we imagine a star to pass moderately close to the solar system, in order to calculate the perturbing effect correctly, again using the inverse-square rule, it could be essential to use a "center of mass" which included the star. The "center" in this case would lie even farther away from the center of the Sun. It appears, then, that the

Chapter 5: Subsequent Popes' Dealing with the Galileo Issue

“center” to be used for any set of bodies depends on the way in which the local system is considered to be isolated from the universe as a whole. If a new body is added to the set from outside, or if a body is taken away, the “center” changes.²⁶²

Lazzari's argument, namely, that we are to understand Scripture's description of the sun's motion and the Earth's rest as “relative motion” and “relative rest,” respectively, is also specious. It is the classic error of begging-the-question, for it believes, based presumptuously upon Newton's laws, that heliocentrism is correct, and thus feels justified in making relative all motion or rest recorded in the narratives of Holy Scripture. Galileo did the same. He started with his presumptuous premise, namely, ‘the Earth moves,’ which then led him to the false conclusion that Scripture's language had to be modified to fit the premise. Thus the syllogism:

Premise A: The Earth moves.
Premise B: Scripture says the Earth does not move.
Conclusion: Scripture is speaking in relative or metaphorical terms.

Of course, no one had proven that Premise A was correct, thus the Conclusion of Lazzari's syllogism was invalid. Conversely, basing one's syllogism on the inerrancy of Scripture and the missing proofs of modern science, the proper format would be:

Premise A: Scripture says the Earth is not in motion.
Premise B: Modern science has not proven that the Earth moves.
Conclusion: The Earth does not move.

In retrospect, Scripture and the common man of biblical times were certainly aware of the difference between relative motion and absolute motion. It is neither a hard concept to understand nor an experience that is remote from every day living. Geometrically speaking, if there is no fixed center among things that move, then everything, to some degree, is in motion. But this is precisely why the Fathers fought for a fixed Earth. It gave a stable and dependable reference point for everything in the universe, both spiritual and physical. Once man knows he is in the very center of things, everything is within his grasp. As physicist Amitabha Ghosh admits: “As long as terre firma had its immobile status...there was no problem. All motions were with respect to the Earth, just as we observe. The difficulty started once the firm ground was lost.”²⁶³

Lazzari also appeals to various and sundry beliefs in Catholic history that were later discovered to be in error:

Nor is it relevant to say that here one is dealing with the interpretation of Scripture and an opinion considered to be against the Faith. It would be unfortunate if, whenever there has been a consensus in the past, we try now to maintain the old shared opinions. Once it was a common opinion, which was supported by citing Scripture, that the heavens were moved by intelligent beings. Thus at about the same time, in paragraph 4 of book 2 of his *Philosophical Course*, Cardinal Sfondrati said: "It was and is the opinion of almost all philosophers and theologians that the heavens are moved by intelligent beings." In question 6 of article 3 of *De Potentia*, St. Thomas says that it belongs to the Faith.²⁶⁴

Lazzari's attempt to cast a cloud over the Church's geocentric tradition is quite desperate. Although the idea that angels moved the heavenly bodies was discussed in and out of the patristic and medieval eras, there was no consensus among either group that it was a reality. In fact, in *De Potentia* 6, 3, Aquinas quotes Augustine from *De Trinitate* 2, 10, saying: "How angels do these things, or rather how God does them through his angels, my sight is not keen enough to see, my reason too diffident to unravel, my mind too slow to grasp; nor can I answer with assurance all the queries that could be made on this matter..." Aquinas himself makes no firm conclusion, but only says: "Although an angel *may cause* the movement of the heavens..."²⁶⁵ In reality, the whole purpose of *De Potentia* 6, 3 was to refute the ideas that angels could perform miracles at will without limitation. In other sections of *De Potentia*, Aquinas shows us his understanding of movement by natural causes: "Although the local movements of the lower bodies as well as other movements are brought about by certain fixed natural causes..."²⁶⁶

As for Scripture, there exists no passage which states that angels move the heavenly bodies. The most that could be gleaned from Scripture is that only at certain times can angels exercise extraordinary powers in the temporal realm. Conversely, Scripture is replete with passages that specify the Earth is at rest and the sun moves. Secondly, the patristic and medieval eras give testimony of an absolute consensus to the doctrine of a fixed Earth and a moving sun, whereas no such consensus exists regarding angelic forces moving celestial bodies. Thirdly, geocentrism was confirmed by the magisteriums under several pontiffs, pontiffs that guided and approved the process of condemning Copernicanism from start to

finish, whereas an angelic impetus for the heavenly bodies did not even come up for discussion within magisterial ranks.

Consequently, after all the pressure Lazzari brought to bear on the Congregation of the Index, in the final tally, although the 1758 decision excised the “all books” prohibition, none of Lazzari’s arguments convinced the Congregation to lift the ban on Copernicus, Foscarini, Zúñiga, Kepler or Galileo, or to consider heliocentrism as more than a hypothesis. No permission was granted that Copernicus’ model could be published without the previously required “proper corrections.”

The Rebuff to Astronomer Joseph Lalande

The solidity of Benedict XIV’s 1758 approval of the acts of the Sacred Congregation in continuing the ban on Copernicanism was confirmed with legal overtones when French astronomer, Joseph Lalande, while visiting Rome in 1765, attempted to have Galileo’s *Dialogo* taken off the Index. Lalande cited the fact that the 1758 Index had withdrawn the general ban on books about Copernican cosmology. The head of the Congregation of the Index promptly told Lalande, however, that since the prohibition against Galileo and his *Dialogo* was precipitated by a canonical trial, the sentence pronounced against Galileo would first have to be revoked in order for a lifting of the prohibition.²⁶⁷

The importance of this canonical protocol cannot be underestimated. If the head of the Congregation of the Index indeed spoke officially for the Church on this matter, he informs us in no uncertain terms that for any rehabilitation of either Galileo or his heliocentric theory to occur, a formal and legal reversal of his sentence and condemnation would first have to occur, either by the then present magisterium or any future magisterium. If there is no subsequent formal and legal exoneration of Galileo, then, according to the canonical protocol of the Catholic Church, Galileo and his heliocentric theory remain condemned to this very day. Since the Church has not initiated any official, formal or legal rescission of Galileo’s condemnation, it remains legally in force.

The Disclaimer on Isaac Newton’s *Principia Mathematica*

Lalande and Lazzari represented a group of scholars who were advancing the theories of Isaac Newton to support heliocentrism. But there was an equally strong force against succumbing to the Newton factor. Isaac Newton, who, coincidentally was born in the same year Galileo died, 1642, published his famous work titled *Principia Mathematica* forty-five years later in 1687. It was, and is now, the most famous book ever written

on physics and mathematics. It was the *Principia* that single-handedly gave geocentrism its most difficult challenge, since, apparently, Newton's laws of motion: (a) required the sun to be larger than the Earth, and (b) required the smaller body to revolve around the larger body. As we noted previously, Newton's laws actually stated that both the smaller and the larger body revolved around the center of mass that was located somewhere between the two bodies, but since the distance of the center of mass between the Earth and the sun was near the center of the sun, in all practicality, Newton's book was well on its way to convincing the whole world that heliocentrism could be the only possible answer to the question of celestial revolutions.

But Newton's *Principia* had formidable competition from the Catholic Church. In 1739-1742, when the three-volume edition of the *Principia* was published in Geneva, the Catholic Church apparently had enough power to assign two Minim friars from the Franciscan order, Thomas Le Seur and François Jacquier as editors (although they are commonly mistaken for Jesuits). Their editing of the *Principia* was for the purpose of introducing Newton's work to the educated class of the Roman papal court. As one author judged their edition:

With its rich editorial content, extensive summaries and detailed index, the Jesuit edition remains the most ambitious and perhaps the most useful edition ever published. It was reissued in Geneva in 1760, Prague in 1780-85, and finally in Glasgow in 1822 and 1833, with further changes by J. M. F. Wright.²⁶⁸

The most significant feature of the above editions of the *Principia* in light of the heliocentric/geocentric debate was that the Preface contained a disclaimer, or what was then known as a "Declaratio," stating that although Newton assumed the heliocentric system to be true, this was not the belief of the editors, Le Seur and Jacquier, who represented the Catholic Church. Hence, each reader of the *Principia* would understand that although the editors wrote as if they accepted Newton's heliocentrism, they did not, in fact, agree with it at all. All editions carried this wording:

Newton in his third book assumes the hypothesis of the earth's movement. The author's propositions could not be explained except on the same hypothesis. Hence we have been obliged to put on a character not our own. But we profess obedience to the decrees made by the Supreme Pontiffs against the movement of the earth.²⁶⁹

This is quite a statement. The Pontiff reigning at the time was Benedict XIV, the same pontiff that eventually gave approval to remove the prohibitory sentence from the Index [that is, “all books teaching the earth’s motion and the sun’s immobility”]. Hence, whatever allowance he had given in 1742 and 1758 it appears not to be interpreted as supporting the heliocentric system. In fact, we take strict notice that Le Seur and Jacquier did not attribute the “decrees...against the movement of the earth” as coming merely from “theologians” or even cardinals in high places, but specifically from the “Supreme Pontiffs” up to their own day. Their specific use of the plural “Pontiffs” recognizes all the previous popes whom they understood as holding the same truth as Benedict XIV. All of them, without exception, had condemned the notion of a moving Earth. As editors under the Church, Le Seur and Jacquier would never have been able to attribute the rejection of heliocentrism to all the “Supreme Pontiffs” unless they were permitted to do so by those very popes; and unless the consensus of allegiance to the pope on this matter was pervasive throughout the continents under her control. If the Church had disagreed with the disclaimer and had decided by 1739 to accommodate cosmologies other than geocentrism, the disclaimer would have been removed since the disclaimer is making the bold and well publicized proclamation that all the “Supreme Pontiffs” have rejected Newton’s heliocentrism. In 1739, when Jaquier and Le Suer first published their commentary, the Index against heliocentrism was alive and well, as noted by the fact that Benedict XIV kept Copernicus, Galileo and Kepler on the Index in 1741 and 1758. If Jaquier and Le Suer had promoted Newton’s heliocentrism, they would have been put on the Index as well!

Interestingly enough, Pietro Lazzari, noted earlier for his long letter seeking to convince the Inquisition in favor of Copernicanism in 1741, mentions Le Seur and Jacquier in his letter as “two celebrated mathematicians of the order of St. Francis of Paola”²⁷⁰ and ironically he attempts to use them as corroborating testimony of the position that “nowadays the prevalent opinion among the most competent astronomers and physicists is that the earth moves around the sun.” Hence, either Lazzari did not know of Le Seur and Jacquier’s devotion to geocentrism, or he was purposely distorting the truth by ignoring their disclaimer.

The most significant aspect of the *Declaratio* was that it persisted in all Latin volumes of the *Principia* for the next hundred years. The last volume on record to contain Le Seur and Jacquier’s disclaimer was the 1833 Glasgow (or Glasguæ) edition, two years before the Index of Gregory XVI (see facsimiles on page 129). This late date (1833) proves once again that the Pontiffs of the Catholic Church were the main authorities against the heliocentric system. By 1833, Newton was a household word and anyone worth his scientific salt knew his theory and

most likely agreed with it, at least in principle. That his book still contained the *Declaratio* against heliocentrism in 1833 meant that the Catholic Church still believed in geocentrism and, consequently, the imprimatur granted to Settele in 1822 really had no effect on that consensus. Unfortunately, none of these facts were added to the 1992 speech of John Paul II.

These matters are quite sobering. If we consider that in the present day we are some 180 years from the publication of the last *Declaratio* on Newton's *Principia* (the most formidable defense of heliocentrism up to that time) it means that any belief in heliocentrism in Catholic society today is virtually in its infancy. During this 180-year period (1833-2013) some of the most sophisticated scientific experiments ever performed demonstrated that the Earth was standing still in space. Already in 1818 the stage was being prepared. Dominique Arago tested the refraction of starlight and found that regardless how he adjusted his apparatus the results always showed the Earth was at rest. Augustin Fresnel and Armand Fizeau tried in vain to upset his results since they knew of and rejected its geocentric implications. The same results were again confirmed by an even more sophisticated experiment performed by George Airy in 1871. The final nail in the coffin came from the Michelson-Morley experiment of 1887, and all similar interferometer experiments performed through 1932. They all gave the same results – the Earth was standing still in space. After 1932, equipment with even more precision, masers and lasers, were employed, but the same results persisted.

The upshot of the foregoing history is, while the Catholic Church was maintaining its belief in geocentrism by the unwavering edicts of its "Supreme Pontiffs" through 1833, whatever winds of change Newton and his followers were brewing toward heliocentrism by their new theories of gravity and motion were just as quickly being corralled into support for geocentrism by the hands-on experimental evidence of Arago, Airy, and Michelson. It was as if God was giving the Church and the world all the evidence they needed against Newton in the 180-year interim after the 1833 *Declaratio* to maintain the course in geocentric cosmology. The only way the powers-that-be could fool the world into thinking that they could escape this glaring evidence was to reinvent physical science, which is precisely what occurred in the theories of Albert Einstein in 1905, a scientist, we might add, that had a deep antipathy for the Catholic Church and anything religious. This is precisely why Einstein is considered one of the greatest scientists ever known. He saved the world from having to turn the clock back and submit itself to the Catholic Church in all its power and glory. If Einstein failed, which would mean that the Catholic Church had been right all along about Galileo, we can imagine what a different world this would be. Einstein knew what he was up against for it is more or less

admitted in the way he chose to esteem Galileo, as a man who, in his own words, led “the passionate fight against any kind of dogma based on authority.”²⁷¹ According to Einstein, Galileo’s *Dialogo*, the very book that was condemned by the Catholic Church, had “revolutionary factual content.” He applauds Galileo for standing up against “the host of those” who relied “on the ignorance of the people and the indolence of teachers in priest’s and scholar’s garb” in order to “maintain and defend their positions of authority,” namely, the Catholic Church. Actually, as we have seen, Galileo did no such thing. Einstein and the rest of modern science have merely created a convenient myth about Galileo. Galileo did not rebel against the authority of the Catholic Church. When he was convicted of being suspect of heresy, he abjured, and five years later he had a dramatic conversion experience, and eight years later, one year before his death, he totally rejected Einstein’s universe.

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“The second problem with the liberal Catholic view is that it accepts without question the claims made on behalf of modern science.”

David Wootton²⁷²

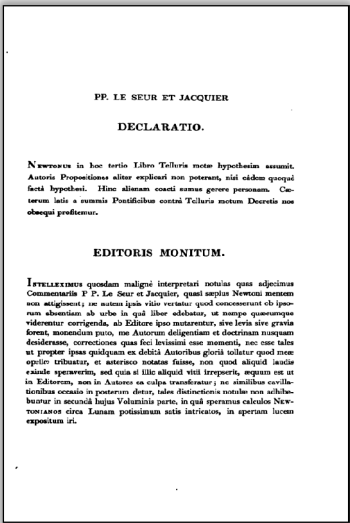
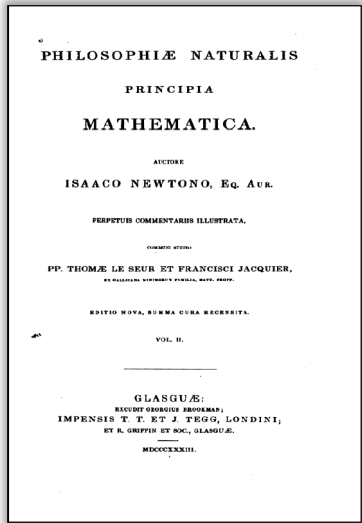
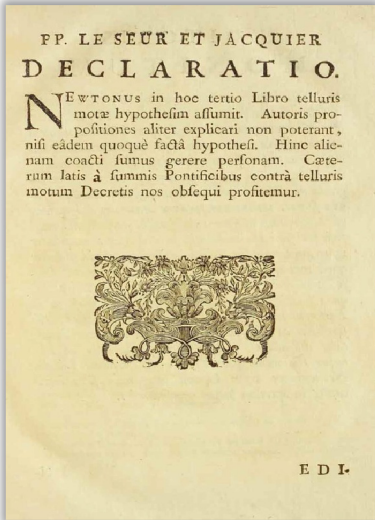
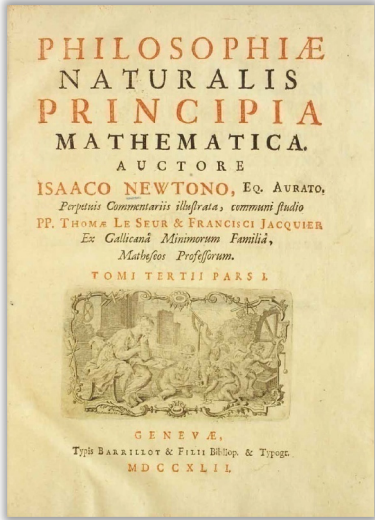
“The Sun never leaves its orbit.”

Dialogue with God, St. Catherine of Siena²⁷³

“It is both amusing and instructive to speculate on what might have happened if the [1887 Michelson-Morley] experiment could have been performed in the sixteenth or seventeenth centuries when men were debating the rival merits of the Copernican and Ptolemaic systems. The result would surely have been interpreted as conclusive evidence for the immobility of the Earth, and therefore as a triumphant vindication of the Ptolemaic system and irrefutable falsification of the Copernican hypothesis. The moral of this historical fantasy is that it is often dangerous to believe in the absolute verification or falsification of a scientific hypothesis. All judgments of this type are necessarily made in some historical context which may be drastically modified by the changing perspective of human knowledge.”

Physicist, G. J. Whitrow²⁷⁴

Chapter 5: Subsequent Popes’ Dealing with the Galileo Issue



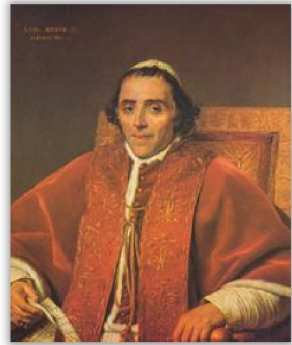
The Catholic Disclaimer Against Heliocentrism
Added to Newton's *Principia*

Chapter 6

The 1820 Imprimatur and the 1835 Index

1820: Pius VII and Canon Settele's Imprimatur

As the 1833 *Declaratio* on Newton's *Principia* shows that the history of papal decisions from 1616 onward had a significant effect on what faithful Catholics believed, conversely, the 1820 imprimatur given to Canon Giuseppe Settele was a classic case of hierarchial subterfuge. It was conducted by Maurizio Benedetto Olivieri who had advanced to the position of Commissary General of the Index. In 1806, Settele had already published a book in Rome espousing heliocentrism. The Master of the Sacred Palace²⁷⁵ at that time was Pani, who did nothing to stop Settele.²⁷⁶



Fr. Filippo Anfossi became the Master of the Sacred Palace in 1814 and was not favorable to Copernicanism. Knowing Anfossi's position, Settele asked Giuseppe Calandrelli (an astronomer and claimant to the discovery of stellar parallax as a proof of heliocentrism),²⁷⁷ and Maurizio Olivieri (his colleague from the Sapienza which held a chair in Astronomy, although Olivieri was not at this time the Commisar of the Holy Office) if one was permitted to speak openly about the Earth moving, and, according to Settele's diary, Olivieri answered affirmatively, thus deciding the case in favor of Settele even before it had been adjudicated,²⁷⁸ and even though he admitted on June 10, 1820 that "the pope (Pius VII) would not be easily persuaded about the truth of the Copernican system."²⁷⁹ From Settele's diary we also learn that after his second volume of *Elementi di Ottica e di Astronomia* was disapproved on January 3, 1820 by Anfossi because it promoted, as a thesis, that the Earth moved, Settele, under Olivieri's advice, sent a formal appeal to Pius VII in March 1820. At this time Merenda was the Commisary General of the Holy Office until July 1, 1820 when he died, and Olivieri did not become the next Commisar until September 2, 1820.

Chapter 6: The 1820 Imprimatur and 1835 Index

Olivieri's bias toward heliocentrism (from which he "assured him [Settele] several times that this system is evident according to the pope")²⁸⁰ and his willingness to dispense with the traditional Catholic teaching on geocentrism was apparently too strong for him to recuse himself. In fact, he told Settele: "if the Commissary preceding Merenda had still been alive, my case would have suffered some delay, because he was obstinate in the old things and did not want any novelty."²⁸¹

Pius VII ordered an examination of the archives of the 1758 *Index* and, apparently without any discussion, asked Turiozzi to tell Anfossi to give Settele an imprimatur.²⁸² Anfossi, believing the pope was not well informed about these issues and suspecting he was not getting the full story, withheld the imprimatur, which then pushed Settele to appeal to the pope again in August 1820, which then led the pope to involve the Holy Office. The controversy within the Vatican became public and the Vatican was criticized in the press for not showing favor to Settele. Two weeks later, Father Antonio Grandi persuaded the Holy Office to tell Anfossi to issue the imprimatur. The notes of the Holy Office of August 16, 1820 stated:

And the intention is, that it will be made known to the Reverend Father Master of the Apostolic Sacred Palace, that he should not hinder the publication of the '*Elements*' by the Canon Joseph Settele; also to make know to the Canon Settele, that he should himself insert into his work some remarks in order to show that the Copernican opinion, as presently supported, is not any more subject to these difficulties implied at a former epoch before they were treated afterward.²⁸³



The Battle between Anfossi and Olivieri

We see by the words "the Copernican opinion, as presently supported, is not any more subject to these difficulties implied at a former epoch before they were treated afterward" that a new and clever rationale was afoot in order to make the heliocentric view acceptable. Anfossi will expose this rationale for what it really is – a clever ruse to win the case for Settele. Anfossi resisted and sent the pope his reasons for doing so in his *Motivos*:²⁸⁴

Olivieri's Refutation of Anfossi

In August 1820, Olivieri attempted a refutation of Anfossi's *Motivi*. In short, it is an incredible piece of propaganda. As even one staunch Catholic historian (Anibale Fantoli, who is an avowed Copernican and in no sense favorable to Anfossi), said of Olivieri's rejoinder: "Olivieri's report, as I have already discussed, contained a completely absurd interpretation of the decree of 1616 and of Galileo's condemnation..."²⁸⁵ Olivieri begins:

The Master of Sacred Apostolic Palace presented in a paper, which lists nine reasons, that "he believed, and believed so as not to have to allow Mr. Canon Settele to teach as a thesis, and not as a mere hypothesis as stipulated in the Decree of 1620, the mobility of the earth and immobility of the sun in the center of the world. In truth these title words show inexperience, that quickly you can understand that Anfossi not only damaged an important matter, but also the author of many printed books. Nothing is more false than this, that Canon Settele wants to teach the stability of the sun in the center of world. Inasmuch as he teaches with the worldwide agreement of modern astronomers, the sun is not the center of the world, and not even in the center of our own planetary system, but to only one of the two foci of the ellipse with respect to which each planet revolves around it."²⁸⁶

We see clearly what is driving Olivieri. It is his belief that the Keplerian system in which the Earth moves around the sun in an elliptical orbit is the correct and proven reality of cosmology. He has dispensed with any system, whether Ptolemaic or Tychonic, which has the sun and planets revolving around a fixed Earth, but has also rejected the pure Copernican system of circular orbits. He has no scientific proof for his conviction of the Keplerian system; rather, he is depending on the "opinions of modern astronomy."

Olivieri then develops Settele's universe to its logical conclusion. If the Earth is not in the center, then there is no center, and the sun is moving through the universe in an undefined location, nowhere near a center. With a few developmental differences, Settele's world is precisely the model of the universe proposed today by scientists such as Albert Einstein and Stephen Hawking. Olivieri states:

Along with modern astronomers, Settele does not teach that the sun is at the center of the world: for it is not the center of the

fixed stars; it is not the center of heavy bodies, which fall toward the center of our world, namely of the earth; nor is it the center of the planetary system because it does not lie in the middle, or center, but to one side at one of the foci of the elliptical orbits that all planets trace. Still less does he teach that the sun is motionless; on the contrary, it has a rotational motion around itself and also a translational motion which it performs while carrying along the outfit of all its planets.²⁸⁷

Olivieri argues his points very cleverly. Rather than admitting to Anfossi's basic argument (that the Earth is not moving), he turns the tables to fault Anfossi for incorrectly describing Settele's system (e.g., accusing Anfossi of saying that the sun is in the center of the universe), thus making it appear as if Anfossi is "inexperienced" in science and should not be involving himself in such matters. This method scores debating points with the Holy Office and especially with Pope Pius VII. In reality, his approach is a smoke screen to hide the real issue. The real issue, as stipulated by the 1616 and 1633 decrees, regarded whether the Earth revolves around the sun, not whether the sun, in its own locale, moves or is fixed, or even whether any of the planets orbit in an ellipse. Ignoring this distinction, Olivieri tries to impress his colleagues by arguing that the sun not only moves, it also rotates, which we know by its moving sunspots, even though this latter feature is totally beside the point.

Olivieri continues with another argument, but a surprising one: "But does Canon Settele expect to teach the mobility of the earth as a thesis, violating the Decree of 1620? He neither teaches this as a thesis nor as a hypothesis." Olivieri is aware of the 1620 decree under Paul V, which allowed the printing of the Copernican system only if it was presented as a hypothesis, not a thesis. But instead of answering the question directly, Olivieri introduces a new line of argumentation – claiming that Settele's book is neither a hypothesis nor a thesis. He does so by changing the definitions of the cosmological terms, and at the same time finds fault with Anfossi for either not accepting the changes or not being aware of them.

If the Very Reverend Father [Anfossi] had had the necessary diffidence [humility] in himself regarding the material – that he did not know mobility well – he would have read in the Books of those times [Galileo v. the Church] what the mobility of the earth was, which was judged to be accompanied by falsities, and against Sacred Scripture.

In other words, Olivieri is making a case that the Church and Galileo were arguing about a *particular kind* of mobility of the Earth, not *any kind*

of mobility. Therefore, since the discussion in the 1600s was confined to one *particular* issue, and that issue was “judged to be accompanied by falsities, and against Sacred Scripture,” then that particular case is settled and is no longer relevant in the 1800s. As such, Settele, at least in Olivieri’s mind, is not presenting *that particular* issue as a thesis or a hypothesis; rather, he is presenting a new thesis that has nothing to do with what was discussed in the 1600s, at least so he argues. He continues his new line of argument:

With this reading, he [Anfossi] would have found that such mobility was that with which the heavy things would lose the center toward which they are drawn, and the light things would lose the center which they go away from. That mobility with which it took the earth from its air which surrounds it, so that extreme disorders would arise from such an abduction of the earth from the air, contrary to that which is experienced and is seen. He would also have found that neither Copernicus nor Galileo knew how to free the System which they followed from such an absurd mobility of the earth;

Olivieri is arguing that in the 1600s, the common belief, following Aristotle’s notion of gravity, was that if the Earth moved around the sun it would cause a disruption of the Earth’s atmosphere and thus remove all the air. Apparently it did not bother Olivieri that no such discussions took place either in the Church’s deliberations with Galileo or in their final judgments against him. The Church simply stated that Galileo’s propositions, from wherever their source or whatever their nature, went against the clear teaching of the Fathers, Scripture, and the interpretation of both as stipulated in the Church’s hermeneutical tradition. Olivieri is simply reading back into the 1600s what he wants to see, since this, in his mind, will be the key that allows the Church to start out on a new road, unhindered by the past.

Olivieri also ran his historiography by Settele and he accepted it with open arms. Settele’s diary says the following:

Olivieri hopes that at this occasion one could withdraw from the Index...the books containing the movement of the earth, as we know, by Copernicus, Foscarini, Didacus a Stunica, Kepler, and Galilei. For thus would the work complete itself, and Anfossi and his clients would not have any more motives to support themselves with the prohibition of these books while quoting the decrees of their prohibition, as if they were still on the Index. I myself asked Olivieri, how one could be able to do this without

contradicting oneself. He answered that they had been prohibited because they implicated ‘absurdi terrestri’ [*i.e.*, ‘naturally absurd conclusions’], that now these [absurdi terrestri] do not exist any more, because all the strongest oppositions against the Copernican system had become ‘absurdi terrestri.’ This answer seems right to me.²⁸⁸

We can see clearly how the fallacious reasoning is developing. It will spread like a cancer through the Holy Office and eventually to Pius VII. It is analogous to Satan twisting what God said to Eve in the Garden of Eden: “God didn’t tell you not to eat of the fruit because it would do you harm. He prohibited you because he knew it would make you a god like him.” It is analogous to someone arguing that the Catholic Church forbade women priests in the past because she was too heavily influenced by a patriarchal society, but now that we have a balance between the sexes there is no reason the Church cannot change with the times, especially if “science” argues that women pastors would be highly beneficial for Catholic parishioners. In fact, such arguments were advanced by the 1976 Pontifical Biblical Commission, which concluded there was nothing wrong with women priests. Any number of issues can be argued with the same rationale (*e.g.*, divorce and remarriage, sexual orientation, contraception, just war doctrine, capital punishment, usury, *etc.*). The reality is, however, that doctrines of faith and morals are not time-conditioned propositions or situation ethics that can change because of different cultural or intellectual climates. In the case at hand, either the Earth moves or it doesn’t move. It is irrelevant how it would move or why it would move. But Olivieri has succeeded in making it an issue of the how and why. Olivieri continues:

...and therefore such a mobility deserved to be prohibited from asserting itself; but since the daily motion of rotation and annual motion of translation of that earth were allowed by the celestial phenomena, they could be admitted as astronomical hypotheses in this way: which, to he who wishes to perceive in the ideas of others that which he perceives, means that it could be allowed to attribute as much rotational as well as translation motion to the earth as he wanted, as long as that other confusing mobility was held to be false and damned.²⁸⁹

Olivieri is like a sharp lawyer defending a guilty client. He has only one shot at winning. He must take the jury’s mind off the real issue and get them thinking about something else, something that seems even more important than the original issue, even though, in reality, it is totally irrelevant. The Church has experienced many of these shysters both before

and after Olivieri, and sometimes they even manage to get a large following. As noted, Olivieri, without any evidence that the relationship between the Earth's air and gravity was even an issue in the 1600s, claims that the Inquisition rejected Galileo based on the supposition that a moving Earth would prohibit it from holding its air. Olivieri adds that since this same seventeenth century Inquisition could not deny the Earth could be moving due to what was observed in "celestial phenomena," then it could allow a moving Earth as a "hypothesis," but not a hypothesis in the Bellarmine sense of the term (e.g., in the sense of reaching the value of infinity or knowing the complete value of π); rather, as a sort of scientific 'stop-gap' until an answer could be found for why the air wasn't sucked from the Earth as it moved. According to Olivieri, the only thing the Inquisition "held to be false and damned" was the model that forced the air to be removed from the Earth, not the model that had the Earth moving around the sun. This reasoning, of course, was totally fallacious, but Olivieri had the ear of his colleagues who were being heavily pressured by modern academia to drop 'primitive medieval' cosmology and join the rest of the world. Thus Olivieri adds:

Now, after the discovery of the gravity of air, it was learned that it forms a single compact mass with the rest of the terrestrial mass, such that in addition, both the heavy and the light, as far as their direction at the center, do not suffer any defect as a result of the rotation and translation of the earth in mass in the spaces of the Heavens.

Where in reality Canon Settele neither defends the mobility of the earth as a thesis nor as a hypothesis, that which was targeted by the Decree of 1616 and 1620 or in the condemnation of Galileo of 1633. The Most Reverend Father [Anfossi] did not notice that the Supplication of Canon Settele to His Holiness was directed at establishing this, which in fact it leaves intact and which respect the condemnations of that time; but shows them to not be opposed to the doctrines of the modern Astronomers.²⁹⁰

This is the second time Olivieri has proposed that Settele is not presenting a thesis on heliocentrism to the Church. As we see again, he is reading back his present understanding of physics into the minds of the seventeenth century magisterium and concluding that they, apparently under the guidance of the Holy Spirit, could not have condemned a moving Earth, *per se*, but only the difficulties a moving Earth would present, such as the dissipation of air from the Earth. As such, Olivieri argues that Settele's book has nothing to do with the decrees of the 1600s

but is merely a scientific treatise explaining, if the Earth were moving, it would present no scientific or theological obstacle for the Church, and therefore the Church should allow the Earth to move, as was the “common opinion of astronomers.” After all, Newton had presumably shown that the smaller Earth must revolve around the larger sun; and Bradley had presumably shown that a moving Earth is what causes stellar aberration; and Calandrelli had presumably shown that a moving Earth causes stellar parallax. These were formidable foes for Anfossi. How could he stand against them?

Similar to Lazzari’s attempt to persuade the 1741 Inquisition, so Olivieri does the same to the 1820 Inquisition:

The Most Rev. Fr. [Anfossi] must be joking when he says that “these gentlemen...try to tell us that what is stated many times by the Holy Spirit is false, but that what their stellar parallax and aberration tell them is true.” Then he calls as a witness Fr. Jamin, to persuade them of the incomprehensibility of God’s works. He also dares say that “the best astronomers and philosophers do not agree among themselves in regard to these discoveries.” But he does not mention anyone. However, the fact is, as I hear from those who are well informed, that although there is no universal consensus among the experts in the field about the annual parallax of fixed stars, the aberration of fixed stars and of the planets has been verified for at least a century and is regarded by all astronomers as a true physical demonstration of the earth’s annual motion....Thus, it is not surprising that the Most Rev. Fr. [Anfossi] who has not had the patience of mastering these astronomical matters, should appear to be incredulous, and that so does the Monsignor Majordomo, who in his memorandum claims to be “convinced of the uncertainty and the great deceptiveness of astronomical science.”²⁹¹

Olivieri goes on for many more paragraphs saying much the same, at one point declaring:

Does the Most Rev. Fr. [Anfossi] think that today Tycho [Brahe] would declare himself against the earth’s motion, against the universal persuasion acquired by astronomers more than two centuries after him, now that they believe the system of the earth’s motion has been “proved as much as anything physical can be,” as Lalande says.²⁹²

Later he adds:

Most Rev. Fr. [Anfossi]...let us note that some of the most cogent proofs, such as nutation and the annual aberration of heavenly bodies, had not been discovered at the time of Gassendi...whereas the discovery of aberration and nutation is assigned to 1727....Before stopping this modest writing of mine, I must not be silent about the Msgr. Majordomo's assertion that "one can maintain as a thesis only what is true or what is believed to be incontrovertibly true"....But the fact is that nowadays astronomers really seem to be so convinced of the earth's motion that they "believe it to be incontrovertibly true."....it is certain that nutation, annual aberration, and other data that require more subtlety to be detected are believed to provide a new irresistible argument.²⁹³

Olivieri is referring to the stellar aberration discoveries of James Bradley in 1727 and the stellar parallax discoveries by Calandrelli in the late 1700s. A close examination of Bradley's and other astronomers' work on this phenomenon reveals that Fr. Anfossi was actually right in saying that Olivieri's alleged evidence was a scientific canard being used to "tell us that what is stated many times by the Holy Spirit is false, but that what their stellar parallax and aberration tell them is true" and that "the best astronomers...do not agree among themselves in regard to these discoveries."²⁹⁴ Although Olivieri then accuses Fr. Anfossi of "not mentioning anyone" who disagrees with these findings, from our modern perspective the record exonerating Fr. Anfossi is very clear. Fr. Anfossi and the Vatican majordomo had very good reasons for refusing to put the Holy Spirit on trial. But Olivieri's arguments are very clever and thus difficult for a persecuted high churchman to resist. If one wasn't privy to the precise condemnations and permissions laid down in 1616, 1620 and 1633, one might be persuaded by Olivieri's preferred juxtaposition of the facts, especially the weaker prelates at the Vatican during the early 1800s who were the object of constant ridicule in the world's press for holding to geocentrism for so long.

In any case, Olivieri faults Anfossi for failing to understand what precisely Settele was presenting to Pius VII. Olivieri claims there is a distinction between presenting heliocentrism as a thesis and presenting how the heliocentric system operates correctly. Settele's book deals only with the latter and as such it, according to Olivieri: "leaves intact...the condemnations of that time [1616-1633]" and "shows them to not be opposed to the doctrines of the modern Astronomers." In Olivieri's mind it was the perfect solution. He kills two birds with one stone. Everyone

should be happy. The Church should be happy because with this solution it doesn't sully the 1616-1633 decrees; and modern science should be happy because now the Church has finally taken the last obstacle out of the way and can rejoice with the world that all mankind now believes the same thing about the cosmos. There is a bright future ahead for science and religion, as long as both recognize the superiority of the scientific consensus in answering questions about the cosmos. The only one not happy was Filippo Anfossi, but he had every right to forego the celebration, for he knew that Olivieri had just pulled off one of the most deceptive campaigns since the ramblings of Arius.

Olivieri continues with Anfossi's **Motivo V**:

Tycho Brahe was a Danish astronomer who was born in 1546 and who died in 1601. Hence it is after Copernicus whose famous work was printed in 1543. He invented a system which was a mixture of Ptolemaic and Copernican. The ancient Egyptians, it is known, recognized the turning around the sun of the two closest planets, Mercury and Venus: Tycho extended this to all of the planets, and with Copernicus, he made them orbit (around the sun. With Ptolemy then he made them orbit)²⁹⁵ around the earth not only the Moon, like Copernicus did, but the very sun, accompanied by the Planets, and almost its satellites. Now the Father Master, from the fact that Tycho formed his argument *ad verecundiam* – an appeal to reverence: “Mr. Can.co will not have the respect of these expressions of Scripture, was he heretical?” And he stated, “this Astronomer is far superior to ours.”

Our astronomers however responded that although Tycho was Protestant, the Protestants, won over by the evidence of truth, loved to follow the discoveries of Copernicus, Kepler and Galileo, all of whom were great Catholic men. They added that no awareness of astronomical things could place them in the same field as Tycho. All things considered, for as great were Tycho's astronomical merits, his system is unbelievable, and not only with many explanations that are very probable, but with varieties that are persuasive and physically demonstrative, administered by phenomena, were refuted. Among these, it is enough to remember the nutation, and the annual peculiarity of the fixed stars and middle planets; phenomena which were observed in all of the stars and planets, necessarily introducing movement from the earth for immediate cause, from which they

came from. Hence, it is not a marvel that Tycho's system had been abandoned by all of the later Astronomers.²⁹⁶

It is here, of course, that Olivieri has either shown his ignorance of science or his lack of patience for what science might discover in the years to come. Olivieri probably thinks Tycho's system is "unbelievable" because he, relying on what he understands of Newton's physics (as did everyone else at this time) cannot imagine how the larger sun could revolve around the smaller Earth. Little did he know that a physicist, Ernst Mach, would be born in the same year, 1838, that Fredrich Bessel discovered the first stellar parallax (which, ironically, was touted as the most verifiable proof of heliocentrism), and proceed to show that Newton's system was inadequate to explain the bigger picture – the universe and its stars in relation to the sun and Earth, as opposed to dealing with only a sun and six planets. In Olivieri's day, mankind had no concept of stars exhibiting inertial or gravitational forces on our earthly environment, and thus he had no concept that this tiny Earth could serve as the center of mass for a rotating universe. Olivieri had no concept that all of space contained a microwave background radiation whose temperature variations point back to the Sun-Earth envelope as the hub of the whole universe, and thus he had no concept that the very length of this hub, 1 astronomical unit, if applied to the Tychonic model, would allow the stars to rotate around it in such a way as to produce the very "nutation and the annual peculiarity of the fixed stars" that Olivieri complains above is missing from Tycho's model.

As we have seen, on the one hand Olivieri argues against Anfossi by using the advances of science in the 1800s (*e.g.*, that air is kept in place by Earth's gravity) over against the lack thereof in the 1600s (that air would be sucked out if the Earth moved). On the other hand, Olivieri is quick to limit science to what he believes are the facts of his day, thus leaving no room for future discoveries in which the very system his Church believed for the prior 1800 years would, with a little faith and patience, manifest itself in the years to come. As it stands, not only did the proofs come, they came like an avalanche. In fact, during the very time Olivieri is arguing against Anfossi, the French scientist Dominique Arago is looking through his telescope in the early 1800s and observing that the Earth wasn't moving through space as Copernicus and Galileo contended. On and on the years went and more and more evidence was uncovered. Unfortunately, every time there was a victory for the geocentric system in the eighteen and nineteen hundreds it was quickly overshadowed by false heliocentric claims (stellar parallax in 1838; the Foucault pendulum in 1860; *etc.*). Olivieri was the beginning of this obfuscation, but time has finally caught up with his ploy and will eventually overcome it.

Chapter 6: The 1820 Imprimatur and 1835 Index

Olivieri moves on to *Motivo VII* concerning the “Irreformability of Pontifical Decrees.” It is a very intense and biting response:

This title is deadly to the Most Reverend Father Master: the Pontifical Decree of 1758 for the *Index* is irreformable. Thus the Most Reverend Father Master is guilty of a grave failing by eluding it and deriding it, as he did. At the meeting, Canon Settele leaves all their vigor to the decrees of 1616 and 1620 and only demonstrates that the doctrine of the modern Astronomers is not the one which was targeted by those decrees, and in such an interpretation not only has the support of the Decree for the *Index* of 1758...

Olivieri’s argument shows its deepest contradiction here. He claims that the “Pontifical Decree of 1758 for the *Index* is irreformable.” If it is, then how could it go against an earlier irreformable pontifical decree given by Alexander VII in 1664 regarding the same *Index*? That is, if, as Olivieri has previously claimed, Benedict XIV’s 1758 *Index* allows for books to be printed that treat heliocentrism as a thesis as opposed to a hypothesis, but the 1664 *Index* does not allow them to be printed as a thesis, who is right and what is irreformable? Moreover, Anfossi’s actual argument in *Motivo 7* was not concerning the 1758 *Index* but the papally approved decisions against Galileo and heliocentrism between 1616 and 1633. Anfossi stated: “The pontifical decrees, which is the true interpretation of the Scriptures, from which the Faith depends, are irreformable, and the two decrees of 1616 and 1620 regard the interpretation of the Scriptures, and faith, which is clear from their expressions: So they are irreformable: So you cannot do anything contrary to them.” Apparently, Olivieri is including the 1758 *Index* in order to claim his own “irreformable” evidence for his argument.

Let’s, for the sake of argument, allow Olivieri to apply “irreformability” to the 1758 *Index*. As such, in order to prohibit the 1758 *Index* from overruling the 1664 *Index* (if they are both “irreformable”), in addition to not overruling the 1616 and 1633 decisions that heliocentrism is “formally heretical,” there must be a mollifying factor. What could it be? As we noted, Olivieri has come to depend on the argument that the 1616 through 1664 decisions were in a different genre and were for a different reason than what was commonly understood. That is, they didn’t know certain scientific facts (*e.g.*, whether air would be eliminated from the Earth if the latter moved) and therefore, what they condemned in the 1600s was not the same thing as what is being discussed in the Settele case. But Olivieri’s clever rationale is little more than a well-crafted lie, since the seventeenth century magisterium nether addresses the details of gravity and air currents specifically nor the mechanics of the heliocentric

system in general, much less make it a basis for why it decided against heliocentrism. Let us repeat: the Church of Galileo's day rejected heliocentrism, and specifically a moving Earth, because geocentrism was the consensus of the Fathers and the literal interpretation of Scripture that was passed down for 1600 years prior. Nothing can change that simple fact.

Since Olivieri's rationale is fallacious, that leaves only one other possibility, if, indeed, the 1758 *Index* is "irreformable," as Olivieri claims. The only logical explanation is that the 1758 *Index*, since it also insisted on leaving Copernicus, Galileo, Kepler, Zuniga and Foscarini on the *Index*, could not have meant to allow other books espousing heliocentrism as a thesis to be freely published. In order to remain in line with the outright condemnations of heliocentrism from 1616, 1633 and 1664, and yet also remain in line with the 1620 decision to allow hypothetical treatments of heliocentrism, the 1758 *Index* would be required to allow books on heliocentrism only as a hypothesis. If Olivieri argued otherwise, then he would have put the "irreformable" 1758 *Index* at direct odds with the "irreformable" 1664 *Index*, which simply cannot be, otherwise the very concept of "irreformable" is itself reformable.

Not surprisingly, the issues concerning the "irreformability" of the decrees against heliocentrism need to be expanded. As they are, we will see Olivieri's devious means of escaping the problem. One of the more cogent analyses of this issue comes from Maurice Finocchiaro:

Another key objection by Anfossi had been that papal decrees were unrevisable, and since the earth's motion had been condemned once, there could not be another decree withdrawing or revising the first. Olivieri did not reply by denying that the condemnation of 1616 was a *papal* decree but rather by denying that the earlier decree needed revision (§56). He had an argument why the condemnation of the earth's motion as contrary to Scripture did not have to be revised: it did not refer to motion, *per se*, or as it exists in itself; what had been condemned was the proposition that the earth moved in the sense of motion that implied all the mechanical difficulties that seemed derivable from it; and the earth's motion in this "devastating" sense was indeed contrary to Scripture. Correspondingly, the earth's motion theorized by the astronomer of Settele's time was a motion freed of such difficulties, and so it was not contrary to Scripture.

Again, we see Olivieri's novel attempt to change the terms of the debate from one of *strict motion* to one of *difficult motion*. Thus Finocchiaro continues:

This reply is interesting. Insofar as it spoke of unrevisability rather than infallibility, it was dealing with a more manageable concept. Moreover, it seemed to presuppose that there was a papal decree against the earth's motion, and so Olivieri's criterion for a papal decree seems less stringent than those prevailing today. He seemed to regard a papal decree as one which the pope made while discharging his official functions, such as being president of the Congregation of the Holy Office; examples of such decrees would be Paul V's decision that the earth's motion was contrary to Scripture (endorsed at the Inquisition meetings of 25 February and 3 March 1616) and Urban VIII's decision that Galileo be condemned (reached at the Inquisition meeting of 16 June 1633). Although Olivieri's criterion was probably historically correct, it is also important to point out that the definition of a papal decree *ex cathedra* was undergoing some evolution; thus by the end of the nineteenth century such a decree had to contain an explicit self-referential description that the decree was being characterized as *ex cathedra* and infallible.

Olivieri must go through these contortions because, as a high churchman, he is required to show the proper deference to previous ecclesiastical authorities in the tradition. The Catholic Church is built on what was decreed in the past, since it cannot change in the future. But the fault of course, is not all Olivieri's. As Finocchiaro points out, we all must contend with the "evolution" of papal infallibility and how it is applied, which then becomes the favorite cudgel of Galileo supporters who use it to dismiss sixteen hundred years of Church tradition and three papal confirmations of that tradition (in 1616, 1633, 1664) as inconsequential simply because they were not endorsed by an "*ex cathedra*" pronouncement. This apologetic, of course, conveniently disregards the fact that the unchanging Ordinary magisterium for those sixteen hundred years is just as infallible as a papal pronouncement, which is precisely why Paul V, Urban VIII and Alexander VII were compelled to honor it, and which was precisely Anfossi's argument against Olivieri. Finocchiaro adds:

Finally, Olivieri seemed to presuppose a peculiar theory of meaning according to which the meaning of a proposition

Chapter 6: The 1820 Imprimatur and 1835 Index

includes the consequences implied by it, or perhaps the consequences allegedly derivable from it; but this theory of meaning does not seem to be at all plausible.

Finocchiaro is being rather polite. What he means is that Olivieri concocted a facile and unheard of ecclesiastical maneuver in order to whittle down the Church's condemnation of heliocentrism to nothing more than the narrowminded musings of primitive medievals stuck on Aristotle; and he did so without even the slightest indication that the official records hove no concern about how motion would be accomplished were relevant; or that even if they were relevant, it wouldn't have mattered in the end in any case since the issue strictly concerned whether the Earth moved, not whether it was possible to move.

In the end, Olivieri manages to twist "philosophically absurd" away from the original intent it had in 1616 and 1633²⁹⁷ and turn it into the difficulties a moving Earth presented to the science of that day. He writes:

I hope the Most Rev. Father [Anfossi] can quietly accept that that system was not declared "heretical" or "erroneous in the Faith"; that due to their ignorance, Copernicus and Galileo were unable to remove the "serious difficulties" affecting our globe, and so their system was infected with a devastating motion; that therefore the condemnation was based on the philosophical absurdities on account of which the system had consequences implying that the doctrine (I mean *their* doctrine) could be called contrary to Sacred Scripture; and that all this does not harm in the least the respect due to the decrees of the Sacred Congregations.²⁹⁸

Olivieri had an additional specious explanation for the wording of the 1616 and 1633 decrees. He begins by making the preposterous claim that the order in which the magisteriums listed their condemnations (*i.e.*, first "philosophy," second "Scripture") meant that they were not really concerned about the second:

You will certainly find in Scripture and in the Church Fathers assertions of terrestrial immobility that is opposed to the devastating mobility; but to properly understand the latter with its problematic characteristics, you will have to focus on what you perceive in experience and apprehend by reason, for here one is not dealing with a supernatural mystery but with something accessible to experience and observation; that is, you will need philosophy to make you perceive the falsity and

absurdity, so that based on these you can understand the language of Scripture and of the Church Fathers, which uses experimental notions. This is the way it must be; and this is in fact shown by those theologians and by the Sacred Congregation, both of whom pronounced the doctrine false before calling it contrary to Sacred Scripture; by doing so they warned us to fix our attention on the philosophical falsity, and thus to not go astray in thinking of contrariety to Sacred Scripture, for mobility and immobility are not things which God has chosen to reveal to us; rather he has inspired the Sacred Writers to express to us what our senses perceive in the way they perceive it. Recall the statement of our Holy Teacher [Aquinas]: “Moses describes what is obvious to sense, out of condescension to the ignorance of the people”²⁹⁹

This is what made Olivieri a prominent and lasting churchman. He was able to play the political game of not offending his superiors or his opponents, and was also able to preserve the “decorum” of the Church in front of the rest of the world. Hence, he would give his proper respects to all the previous decisions and yet he would present them to his peers with just enough twist to make an alternative view palatable to them. This kind of diplomacy was precisely what was needed to make this proverbial pig fly.

For the record, Aquinas was a devoted geocentrist who based his belief on the literal interpretation of Scripture’s cosmological passages, in addition to his firm commitment to the interpretation of Scripture according to the consensus of the Church Fathers. Second, the sentence from Aquinas that Olivieri chooses to support his argument is not only taken out of context, it is in a passage where Aquinas confirms his belief in geocentrism! In the passage, Aquinas’ only concern is whether the whole firmament itself revolves around the Earth or that only the stars revolve around the Earth, the same question that Chrysostom had at one time. Aquinas writes:

Reply OBJ 3: According to Ptolemy the heavenly luminaries are not fixed in the spheres, but have their own movement distinct from the movement of the spheres. Wherefore Chrysostom says (Hom. 6 in Genesi) that He is said to have set them in the firmament, not because He fixed them there immovably, but because He bade them to be there, even as He placed man in Paradise, to be there. In the opinion of Aristotle, however, the stars are fixed in their orbits, and in reality have no other movement but that of the spheres; and yet our senses perceive

the movement of the luminaries and not that of the spheres (*De Coelo* ii, 43). But Moses describes what is obvious to sense, out of condescension to popular ignorance, as we have already said (Q67, A4; Q68, A3). The objection, however, falls to the ground if we regard the firmament made on the second day as having a natural distinction from that in which the stars are placed, even though the distinction is not apparent to the senses, the testimony of which Moses follows, as stated above (*De Coelo* ii, 43). For although to the senses there appears but one firmament; if we admit a higher and a lower firmament, the lower will be that which was made on the second day, and on the fourth the stars were fixed in the higher firmament.³⁰⁰

When Olivieri tries his hand at the principles of biblical interpretation, similar to what Galileo did with Bellarmine, he creates problems so that he can fix them, but in reality the problems do not exist:

The “arm of God” is an expression that sounds absurd if understood literally; thus it is interpreted in a figurative sense, as a figure of speech....it is enough to reflect that Catholics learn from the Church and study in its theological schools when one should regard as absurd the meaning of scriptural words variously labeled literal, material, natural, *etc.* and adopt a meaning variously called translated, improper, and what not.³⁰¹

What Olivieri does not admit, however, is that the Catholic “theological schools” for the 1800 years prior to Olivieri’s ascendancy to his post had always taught that the “arm of God” was not to be interpreted literally, for in the hierarchy of exegetical truths, the fact that God was a spirit overrode any temptation to assign human body parts to Him. By the same token, however, the Church also taught that Scripture’s cosmological passages were not prohibited by the hierarchy of biblical truths to be interpreted literally. Of course, Olivieri was probably aware of these historical principles in Catholic exegesis but he ignored them, believing he had a trump card, as it were, with his alleged “scientific proofs” for Kepler’s elliptical system. So strong were these proofs, he believed, that science itself would now serve as the ‘hierarchy of truth’ to make exegesis bend away from a literal interpretation of scriptural cosmology. Thus, he boasts:

But what difficulty is there if by subsequent discoveries men correct what they thought was contrary to the Sacred Scriptures? Of if those who are more knowledgeable in the sciences are in a

Chapter 6: The 1820 Imprimatur and 1835 Index

better position to correctly understand what the Scriptures say about them?³⁰²

As Finocchiaro notes, “Thus, although some may admire Olivieri’s balanced impartiality, his argument was Solomonic in more than one sense; it was a double-edged sword of questionable value to a friend of the historical Galileo.”³⁰³ Finocchiaro’s statement shows that, being a heliocentrist himself, he is looking for someone to provide satisfactory arguments for the Church in order to rehabilitate Galileo, but he does not find it in the person of Maurizio Olivieri. As Finocchiaro sees it, Olivieri is a sophist who is engaging in double-dealing. Unfortunately, it was precisely these specious arguments of Oliveri that eventually convinced the Holy Office to give the imprimatur to Settele, and, as we will see later, convinced Gregory XVI to take Galileo off the 1835 *Index*.

In the end, it may not have mattered what arguments Olivieri brought forth. The “opinions” of modern astronomers who were advocating a moving Earth were holding the weight in the deliberations and the Church was heavily influenced by that indomitable authority. “Science,” and its handmaiden, “Scientism,” would become the Church’s most formidable competitor in the remainder of the nineteenth century and on into the twentieth century, especially with the next foray centering on Darwin’s evolutionary theory published in 1859, just three decades later. There seemed to be much larger forces at work in this little crucible of 1820-1822 than just Fathers Anfossi and Olivieri seeing who could present the best argument.

Regarding the 1664 *Index*, Olivieri seeks to lessen its impact:

But turning to the objection of the *Index* of 1664, it helps to observe that in the *Indices* thereafter printed in 1670 under Clement X, 1681 and 1683 under Innocent XI, 1704 under Clement XI, 1744 and 1752 under Benedict XIV, the collection of decrees of the prohibitions and suspensions of books in full length, together with these with which we are dealing, was entirely omitted without giving any reference in any place to the general prohibition of all the Books which teach “mobilitatem terrae, immobilitatem solis.”³⁰⁴

In other words, Olivieri is attempting to make it a significant fact that the subsequent *Indices* did not have the “full length” version of the prohibitions that the 1664 *Index* contained. Conversely, Anfossi had made an opposite but corollary argument in stating that the 1664 *Index* included all the wording of the 1616 and 1633 decrees and therefore was confirming all their condemnations. Of the two, Olivieri’s argument is fallacious. It

doesn't matter whether subsequent Indices didn't have the entire wording. It only matters that they contained the reference to the entire wording, as well as making no attempt to alter or undue the condemnations of 1616 and 1633.

In regards to the relevance of the 1616 and 1633 decrees, Olivieri tries another tactic. He comments on a 1661 book printed in Rome in which Eustache De Devinis argued against the cosmological system of Huyghens. The book quotes a Father Fabri, S.J. as saying "Therefore, nothing prevents that the Church should understand those places of Sacred Scripture in the natural sense, and declare how those things should be understood, so long as the contrary is brought about by no clear proof,"³⁰⁵ and that if such happens, "the Church will not hesitate in any way to declare that these passages should be understood in the figurative and improper way, like the one of the poet: 'the river banks and the cities recede.'" Olivieri concludes:

The conditional *quamdiu* ("unless") he shows a persuasion that the Sacred Congregation had not issued an absolute proscription of the mobility of the earth.³⁰⁶

Seeking to make the condemnations and the prohibitions of the Sacred Congregation conditional until a demonstration of the earth's movement be demonstrated is similar to the rationale Cardinal Bellarmine employed with Galileo, but as we have noted earlier, scholars conclude that Bellarmine did not mean that the decrees against heliocentrism or the prohibition for Galileo not to teach heliocentrism were conditional. Rather, Bellarmine was being his usual polite self, which then provided him a platform from which to offer a counterargument to his opponent, but one that he knew his opponent could not answer. In other words, Bellarmine's was a calculated maneuver to seal his decision, not a conditional proposal to give hope to his opponent. Since the reality of relative motion was very evident by this time (which even Galileo discovered in his day and is now as Galilean Relativity), how could science ever provide proof the Earth was moving? As the scientific philosopher Paul Feyerabend puts it:

...Galileo's utterances are indeed arguments in appearance only. For Galileo uses propaganda. He uses psychological tricks....This is the essence of Galileo's trickery! As a result, the clash between Copernicus and...ourselves...dissolves into thin air, and we finally realize "that all terrestrial events from which it is ordinarily held that the earth stands still and the sun and the fixed stars are moving would necessarily appear just the same to us if the earth moved and the other stood still."³⁰⁷

Bellarmino knew this instinctively, otherwise, as most scholars agree, he would have never pursued the official silencing of Galileo and put the Church's magisterium at risk of being wrong. Still, Olivieri must grasp at straws in hopes that one of them, or perhaps a combination of them, will put sufficient doubt into the mind of his fellow prelates so that they simply give him the benefit of the doubt. As Mayaud notes, "Certainly for those who have formulated it, the decree [of 1616, 1633, 1664] presented a definite character, but the mode itself, according to which it is drawn up (and this is also the case for the sentence of Galileo's abjuration), implies conditionality."³⁰⁸ In reality, the decree "implies conditionality" only to those, like Mayaud, who need it as a basis for relaxing the Church's clear condemnation of the heliocentric system. Olivieri continues:

...but furthermore (and also) he increases an inescapable force among all Catholics, even Gallicans, it is such that from 1634 on, no resentment was seen anymore by the Popes, nor was any book prohibited from the Copernican doctrine, however the doctrine should become universal, and as the Books which had become famous had been published, such as for instance the *Filosofia* of Newton.³⁰⁹

Olivieri is arguing from wishful thinking. He appeals to "no resentment by the Popes" after 1634, but history shows that just thirty years later not only did Alexander VII keep the condemned books on the 1664 *Index*, he also added Johannes Kepler – something the 1616 or 1633 Church had not done. Kepler's *magnum opus* was published in 1630, the *Epitome astronomiae Copernicanae*, written for the express purpose of redoing Copernicus' circles with elliptical orbits. It had been condemned and placed on Alexander VII's 1664 *Index* and continued on the Indices of 1741 and 1758. Although the 1616 and 1633 magisterium did not formally condemn Kepler, the fact is that Kepler was not under their canonical jurisdiction for Kepler was a Lutheran.³¹⁰ The four other heliocentrists that were formally condemned by the magisterium were all Catholics (Copernicus, Foscarini, Zúñiga and Galileo). But after the 1633 trial of Galileo, Protestants began touting Kepler's *Epitome* as a means of protesting the Catholic Church's "censorship of heliocentrism," and thus the Church decided to condemn Kepler's book in its 1664 *Index*. Hence, in regards to Olivieri, the only "devastating" features of his Summation are the historical facts that expose his attempt to twist and distort the truth.

The addition of Kepler to the *Index* entirely defeats Olivieri's argument, which claimed Anfossi was wrong in accusing Settele because Anfossi didn't understand Settele's use of the Keplerian planets revolving around two foci (as opposed to the circular orbits of Copernicus' system).

Similarly, Olivieri made a big issue over the idea that Paul V and Urban VIII failed to fix Copernicus' circular orbits with Kepler's ellipses and thus were forced to condemn Copernicus' model because it supposedly had a "mechanical defect." Perhaps someone such as Olivieri would be inclined to work with such an absurd scenario since he didn't see Kepler's name on the 1616 or 1633 *Index*. But all hope of that was lost once Kepler, along with his elliptical orbits, was added to the *Index* in 1664, and especially under the direction of the Supreme Pontiff. Additionally, Mayaud points out that in 1739 Francesco Algarotti's book on Newtonian mechanics was placed on the *Index*.³¹¹ Evidently, Alexander VII's wording was so strong that it had little problem influencing an Index published seventy-five years later.

As for Newton, Olivieri makes reference to Newton's *Filosofia* as an example of Copernican books that were or should be published. This is a rather revealing comment. If Oliveiri is referring to the book with the title "Newton's Filosofia" or "Elements of Newton's Filosofia," it was not written by Newton but by Voltaire in 1738, who was an atheist and one of the philosophical engineers of the French revolution and the overthrow of the Catholic Church in France. If Olivieri is referring to Newton's *Philosophiæ Naturalis Principia Mathematica* of 1687 through 1726, as we noted earlier, the Catholic editors, Thomas Le Seur and François Jacquier, put a disclaimer on the *Principia*, beginning with the Geneva edition in 1760, followed by Prague in 1780-85, and finally in Glasgow in 1822 and 1833, the latter being the very years Olivieri is trying to defend the heliocentric system with his novel arguments using Newtonian physics in the audience of Pius VII. Ironically, the disclaimer reads:

Newton in his third book assumes the hypothesis of the earth's movement. The author's propositions could not be explained except on the same hypothesis. Hence we have been obliged to put on a character not our own. But we profess obedience to the decrees made by the Supreme Pontiffs against the movement of the earth.³¹²

It is obvious, then, Olivieri had a distorted concept of "no resentment was seen anymore by the Popes, nor was any book prohibited from the Copernican doctrine." Here is the remainder of his argument on Anfossi's **Motivo VII**:

The Father Master [Anfossi] will thus say that "the grave error, the formal heresy, the pernicious doctrine" was peacefully established, and that all Popes have for almost two centuries in the meantime slept, and the most scholarly of these, Benedict

XIV, was guilty of such a prevarication. But, Father Master, this is certainly heretical. Therefore you are on the side of error, and are there with a blind obstinence. But I hope that this ferocious fixation of fantasy has passed now that you have authentically heard the resolution of the Supreme.

As we have seen, it is Olivieri who is in error. He does not know the science as well as he thinks he knows it. The fact that he feels not the slightest compunction for imposing his own scientific criteria upon the Catholic magisterium of the 1600s; and the fact that he didn't notice that his mentor Johannes Kepler and his elliptical orbits were later placed on the *Index* alongside of Copernicus and Galileo, suggests that although Olivieri is both conniving and inept, he was good at bending the ear of the infirm and compliant Pius VII. Perhaps the pope was at least smart enough not to sign his name to anything so as not to make his capitulation under duress worse than it could have been. And, indeed, duress it was, since anytime a pope makes a faulty official decision due to false information, his responsibility is mitigated and his decision is not binding.

Olivieri then moves on to **Motivo VIII**, "The Decorum of the Holy See":

Even this title kills the obstinacy of the Father Master. It is the decorum of the Holy See that it should not only make itself ridiculous but also exorbitant to the scholars of the Century with the interpretation of Your Decrees in a manner that they are repelled at the universal Sentence of the experts in the art in what is uniquely dependent upon human reason and observation? Is it decorum that the decrees of the Holy See which are more wise should be abandoned and trampled to follow an inexperienced interpretation of other (decrees) against the fairly clear sense of the Holy See?³¹³

Olivieri is using his previous argument. For him, Anfossi has an "inexperienced interpretation" of the 1616 and 1633 decrees since, as Olivieri reasons, the decrees were not against heliocentrism, *per se*, but only against the erroneous and unexplained model of heliocentrism Copernicus and Galileo were advocating (*i.e.*, models that could not explain the relationship between air and gravity and did not use the elliptical orbits of Kepler). Because of Anfossi's insistence, Olivieri claims Anfossi is making the Church look "ridiculous" by adhering to dogmatic "Sentences" from tradition when the issue is clearly one of science (*i.e.*, "human reason and observation"). Olivieri moves onto **Motivo IX**:

The Most Reverend Father [Anfossi] turns the same stone over again and again. The interpretations given by him to the ancient decrees wish that it should be taken for the same Decrees, against the perennial sense of the Holy See, and the Decree of the *Index* under Benedict XIV. These (well cared for) assure us that the Copernican system the defense of which today is not contrary to that moderate liberty which it must be left to the interpretation of the Holy Scriptures in the objects purely dependent on reason and experience. This is the rule followed by the most scholarly Fathers and Doctors, such as St. Augustine and St. Thomas.

When Olivieri speaks of the “perennial sense of the Holy See” he is inferring his novel concept that the Holy See was not interested in teaching geocentrism or condemning heliocentrism. But the original “perennial sense” began in the consensus of the Fathers through the 1566 Tridentine catechism of Pius V and the three popes of the 1600s who approved the condemnation of heliocentrism as a heresy. Olivieri pins his hopes on Benedict XIV, but Olivieri has shown nothing to prove that Benedict XIV intended to allow books that taught the Copernican system as a thesis in opposition to the 1620 decree that they were to be published as hypotheses; and logically, Oliveiri cannot explain why, if such was not Benedict’s intention, that as pope he kept Copernicus, Galileo, Zuniga, Kepler and Foscarini on the *Index*. This glaring contradiction in Olivieri’s analysis is precisely why he later seeks to have the five books removed in 1822 when Anfossi, once again, exercises his rightful post and denies an imprimatur to Pietro Odescalchi’s book because it included an extract of Settele’s book.³¹⁴ Olivieri is not successful with Pius VII, but as we will see later, he uses the same tactics in 1835 with Gregory XVI and is successful. We must point out, however, that Gregory XVI was formerly Cardinal Capalleri who worked on the same commission in 1820 as Olivieri did, and was apparently duly influenced by Olivieri.

Olivieri also tries to make a case that such issues are “purely dependent on reason and experience” and cites Augustine and Thomas as his support. But both Augustine and Thomas were geocentrists on the same grounds the Church was – their gift of reason led them to accept Scripture, and, more importantly, the Church’s confirmed literal interpretation of Scripture’s history, as the ultimate authority on the cosmos, especially since their reason also led them to realize they could not observe the world from space and see which object was revolving around which. Olivieri, like many heliocentric apologists ancient and modern, comes to the debate believing that he has a whole arsenal of proofs for his heliocentric system, but none of them hold up to scrutiny. In

the end, Olivieri is in the same place that Galileo was two hundred years earlier when Galileo was depending on the specious arguments of the Earth's tides and Jupiter's moons to win the day with Bellarmine and Pope Urban VIII. He believed he had scientific proof when, in fact, he only possessed data that can be interpreted more than one way. Olivieri continues:

Nothing is easier than demonstrating that in none of the Written texts objected to are we taught that the earth does not have the movements which the Copernican system imports, or that the Sun has those, which takes them away.

It appears from Olivieri's reference to "the Written texts" (Scritturali) and his reference later to "the Holy Writer" (his Italian: Sacro Scrittore) that both of those sources refer to Scripture. As such, his attempt here is to prove his point by using a double negative, *i.e.*, Scripture does not say the Earth does not revolve around the sun. But two can play this game. Scripture does not say the moon is not made of green cheese, but that does not mean the moon *is* made of green cheese. The reality is, Olivieri, like Galileo, wants Scripture's cosmological passages to be interpreted non-literally so that the claim can be made that "Scripture does not teach against the Copernican system." The question Olivieri does not answer is: does he have the right to change the interpretation from literal to non-literal after the Church held to the literal interpretation for 1800 years prior? Olivieri mistakenly believes he has such a right for the same reason Galileo did – he believes he has scientific proof for heliocentrism. Suffice it to say, as we discovered with Galileo "proofs," we also know Olivieri had no proof. Olivieri continues:

The "firmavit orbem terre qui non commovebitur" excludes the destruction by earthquakes and that (devastating mobility of which now there is no problem in the system, as we said). The earth which "is in eternity" is opposed by the Holy Writer to the "generation comes, generation goes," and again not contrary to the rotation or translation of the terrestrial mass but the devastating mobility which would prevent the successive generations from taking place. The birth and setting of the sun, and going from Austro to the Kite, and from the Kite to Austro, expresses the daily and the apparent annual movement of the Sun produced by the movements of the earth (but could not such appearances form for spectators thrown down and even left behind by the devastating mobility).

Olivieri is quoting from Psalm 93:1 (Ps 92:1 in the Vulgate) the sentence, “the earth is firmly established and will not be moved,” and Ecclesiastes 1:4-5: “A generation goes, and a generation comes, but the earth remains for ever. The sun rises and the sun goes down, and hastens to the place where it rises.” He is arguing as he did earlier that once modern science discovered how the Earth’s atmosphere can stay attached to the Earth even though the Earth is moving, it was no longer necessary to view Psalm 93:1 as teaching the Earth was motionless in space. As we noted earlier, no such discussions took place when the Church condemned the concept of a moving Earth in the 1600s. This is simply Olivieri’s attempt to create a problem that he can solve in order to take the focus off the real issue, which is that the Church decided the issue based on divine revelation and the correct interpretation thereof, not on whether a moving Earth was scientifically feasible. Additionally, Olivieri’s anecdote doesn’t provide any proof for his case, since a non-moving Earth will also be free of the “devastating mobility.” Olivieri continues:

So also (having removed the devastating mobility) could the Sun appear to be stopped in the middle of the Sky, and the shadow retreat into the sundial of Ahaz even if the one and the other are said to have occurred because of the stopping or retrograde movement of the earth. (Therefore the same texts of the Sacred Scriptures, while they are against the devastating mobility, offer nothing which opposes the, I shall say, celestial motions of rotation and translation of the earth, which modern astronomers believe to be undeniable, since their aberration have been recognized by the observations.)

Hanging everything on his invented problem of the “devastating mobility” (NB: Olivieri claiming “Scripture” is “*against* the devastating mobility” even though Scripture mentions nothing about such phenomena) having been answered by Newton’s gravity, Olivieri attempts to debunk one of the more famous passages traditionally employed to defend geocentrism, Isaiah 38:11, in which God moved Ahaz’s sun dial back by ten degrees. Olivieri’s explanation would also apply to Joshua 10:10-14 in which the sun is said to be stopped in the sky for a day. He proposes that instead of the sun being stopped or turned back it is just as feasible for the Earth to be stopped from rotating. It certainly is. But the text says that the sun, not the Earth, was turned back. The burden of proof is on Oliveiri and his generation to prove the converse, especially since the Church for 1800 years prior said that the only proper interpretation of these biblical passages is that God stopped the sun, not the Earth.

Olivieri then tries to slip in a support, as he did earlier, by a reference to the “*prepili*,” which, although it is an obscure Italian word appears to be either a reference to stellar aberration or stellar parallax. As we noted earlier, stellar aberration was discovered by James Bradley in the 1700s and it was then understood as an additional proof for a moving Earth, as was the stellar parallax presumed to have been discovered by Guiseppi Calandrelli. We now know that both stellar aberration and stellar parallax have their counterpart in the geocentric system, just as every other past purported proof of heliocentrism now has a geocentric counterpart.

Where the Father Master of the Holy Palace can be taught, and stops wanting to seem a terrible astronomer, bad biblical scholar, Theologian of little judgment, and delinquent Magistrate in office, not that in reality very little respectful to the Holy See in the act that affects to be it, and the inducer of those errors, which it fights with regard to obedience to the Holy See itself, with this strange obstinance, which if it in principle could have been virtuous firmness, now would certainly degenerate into a bad vice. And all should be said without reduction of the high regard, and sincere veneration, which I profess to it.³¹⁵

We have here a glimpse into the real battlefield between religion and science. It did not start between the secular world and the ecclesiastical world; it started right in the halls of the Vatican between prelates holding opposite views. Olivieri, here sounding more like the petulant Galileo than a humble cleric, speaks from a mouth full of pride based on the scientific knowledge he presumes to possess. Religion is fortunate in that it has very little wiggle room to change its views. But science, as Max Planck once told us, changes “funeral by funeral.” Even before the breath is out of Olivieri’s mouth, the scientific facts he so idolizes are busy being overturned by evidence that his Earth cannot be detected moving, for after Arago in the early 1800s came Fizeau, Fresnel, Hoek, Mascart, Airy, and Michelson over the remaining nineteenth century who provided astounding evidence that Earth was motionless in space. They were followed by Mach, Einstein, Hubble, Born, Hawking, Ellis and many more admitting not only that they had no scientific basis to deny a motionless Earth, but all the evidence indicated the Earth was in the center of the universe. If only Olivieri had waited on God as much as we wanted the Church to wait on science, Settele would have never been honored with an imprimatur. Still, an imprimatur issued by the Church is only a tremor that can be subdued, not an official doctrine overturning eighteen centuries of Catholic tradition.

Chapter 6: The 1820 Imprimatur and 1835 Index

Perhaps feeling he has the upper hand in this battle, two years later in 1822, Olivieri shows his real hand:

On September 18 in the current year 1822, this Supreme Sacred Congregation considered that one would not from now on mark in the decree what it had formulated on September 11, the preceding week of the same month, in regard to the part that considers the removal from the *Index* of the named books by Copernicus, Zuñiga, and Foscarini, expressly named in the Decree of the Holy Congregation of the *Index* of March 5, 1616 until that was recognized, if truly for the sole purpose of teaching the mobility of the earth and the immobility of the Sun, the first two “donec corrigantur” (“while corrected”) were suspended and the last was prohibited, that is, even if for some other reason.³¹⁶

As Mayaud notes concerning Olivieri’s duplicity:

One may easily imagine Olivieri’s disillusionment in late 1822. It is important to notice here the “for some other reason,” which arises from the “unless something else opposes it” of the last paragraph of the decree of September 11, 1822 (‘supra’ p. 245).³¹⁷ This however would be a scruple of the last hour. It should have partly motivated certain cardinals of the Inquisitors for the suspension; or was there something else which had caused the prohibition? It should have been sufficient to respond to them that the decree of 1616, as we have at length shown, presented a completely exceptional character in the formulation, for it explained the motive of the prohibition, the knowing of an ‘instruction of the Pythagorean teaching, contrary to the Scriptures’ (what none of the decrees of that time did in regard to the prohibited books), and that it did not show anything else!³¹⁸

Although the matter is academic due to the fact that the official statement of September 25, 1822 reversed that of September 11, 1822 regarding the removal of Copernicus and the others from the *Index*, the fact remains that the September 11 statement made a provision that Copernicus, Foscarini and Zuniga would not be removed from the *Index* (or they would be put back on the *Index* if previously removed) if something was discovered later that opposed their removal. This includes any new information that would be decisive in determining the truth. For example, if a document were discovered that indicated the 1616 magisterium took into account Kepler’s elliptical orbits of the planets, as well as gravity holding air to the Earth’s surface, but determined those

issues made no difference in their decision to condemn Copernicanism due to the fact Scripture indicated the Earth did not move at all, Olivieri would be forced to give up his crusade for Settele. Or if it might later be found that although gravity holds air to the Earth's surface, it has nothing to do with whether the Earth moves or not; or perhaps if it was discovered that elliptical orbits were not the only or best answer to the revolutions of the planets; or that the sun, even though larger, was not prohibited from orbiting the Earth if the Earth was the center of the universe; or if the "opinion of modern astronomers" on the movement of the Earth was to change, that is, new evidence indicated it was not moving; then these new discoveries would certainly be instances in which "something else opposed" the removal from the *Index* of Copernicus, Foscarini, Zuniga, Galileo and Kepler, and would certainly forestall the issuing of any more imprimaturs for books espousing heliocentrism. Suffice it to say that many of the above scenarios have already occurred in science but the Church has been too weak to act upon them.

In any case, Mayaud is pointing out that Olivieri, at the last hour, is merely giving lip service to "something else opposed" that would prohibit Copernicus and his colleagues from being removed from the *Index*. Additionally, Mayaud points out that Oliveiri, if he were to be honest, should have adhered to his original story, namely, that "the decree of 1616...presented a completely exceptional character in the formulation" (*i.e.*, Olivieri claiming it was issued on the basis that Galileo's heliocentric model would not work due to the belief a moving Earth would lose its air, not that it condemned heliocentrism absolutely), and which motivation Olivieri attributed to their insistence on interpreting Scripture literally.

True to form, Olivieri then writes a 20-page thesis on Copernicus, Foscarini, Zuniga, Kepler and Galileo, and submits it on November 10, 1823,³¹⁹ a thesis which was written, as Mayaud points out, "in order to find this eventual 'for some other reason.'"³²⁰ In retrospect, Olivieri did what most Catholic Galileo scholars do today. Since they are convinced heliocentrism is a scientific fact, their research is always confined to looking for "some other reason" the 1616 and 1633 Church condemned heliocentrism as a formal heresy other than the one and only reason the 1616 and 1633 stated, namely, that "Pythagorean teaching, [is] contrary to the Scriptures." Not surprisingly, today's Galileo scholars give the same specious and presumptuous reasons for their futile search that Olivieri gave. Unfortunately, these specious arguments work well against a scientifically illiterate populace.

Olivieri then makes one last push to have Copernicus and the others removed from the *Index*. He knows that leaving them on the *Index* completely undermines what he set out to do in seeking the imprimatur for Settele – make heliocentrism an undisputed scientific fact and require the

Chapter 6: The 1820 Imprimatur and 1835 Index

rest of the Church to adopt it as such. As of September 1823, Leo II was now pope. In October 1822, Olivieri published his “reasons” why Copernicus, Zúñiga, Foscarini, Kepler, and Galileo were kept on the *Index* in 1758 and why they should now be removed. The following are excerpts from that pleading:

It is nevertheless astonishing that these very great men, who had on their shoulders the task of millions of inserted books on the *Index*, have not achieved their work in regard to these particular Books [Copernicus Foscarini, Zuniga]. If they had the occasion and the ease to do all the examination, which is now done, who would not hold for certain that they would have recognized as consequence of the general permission the removal from the *Index* of these particular prohibitions, *i.e.* of Galilei [sic, he means Copernicus], Zuniga, and Foscarini, given in example of the general prohibition in the decree of 1616, in which is the same done with the omission of that same general prohibition? In regard to the ‘Epitome’ by Kepler and the ‘Dialogue’ by Galilei, their revocation implies their removal, in so far as it is linked clearly to the general interdiction. However there are other prohibited books with the same [general] title. I believe [him] by whom I am assured, although this did not appear to me at first. It is therefore very certain that very famous books of the Copernican teaching, like those by Newton, who is presently already universally followed, have never been prohibited; and yet this famous author had printed at the end of 1686 his work *Philosophiae naturalis principia mathematica* in which he marvelously develops and illustrates such a teaching. I would say now that the motive of the prohibition of these other Books is not as evident, neither as evident, neither as solemn, and consequently their removal from the *Index* is not as much linked to the permission of the Copernican opinion. If there are occasions of particular motives, the Holy See could take them into consideration.³²¹

Mayaud has the best critique of Olivieri’s rationale:

...this long and last response of Olivieri, rather confused, to say the truth; however he tries to show once more that the fact of the incomplete removal in 1758 was not deliberate, but more or less an omission, insisting afterwards on the fact that Newton has never been placed on the *Index*, likewise none of the other Copernican books since 1634. This last argument was in fact

rather weak, because the original prohibition enclosed them systematically; and if the ‘Dialogo’ by Galilei necessitated a special measure because of the ‘imprimatur’ it held, one could ask, why Kepler’s book was the object of a special treatment. In this last case we have seen that Ingoli has without doubt a heavy responsibility. On the other hand, the placing on the *Index* in 1739 of the book by Algarotti (‘supra’ p. 169-170), which was an excellent popularization of Newton, manifests how, in spite of the exceptional character of this prohibition, the attitude of the Roman authorities had no value at that time. In this regard the removal of 1757 appears as an entirely unforeseeable and unexpected decision, to be able to explain itself only by a mind of a ‘sane and modern philosophy,’ by Benedict XIV who held now the supreme authority.³²²

As we noted earlier, the Minim friars who put the disclaimer on Newton’s *Principia* (and which disclaimer persisted to 1833 in the Glasgow edition) show that perhaps the Catholic authorities of Olivieri’s day were negligent for not putting Newton on the *Index*, but there were at least some influential Catholics at that time who were still giving allegiance to the seventeenth century popes who had prohibited Newton’s predecessors.

We also noted that much is made of Benedict XIV being the watershed for the Church’s turn toward the heliocentric camp, but no one, including Olivieri, has proven that Benedict intended to allow books to be published that treated heliocentrism as a thesis, nor how he could do so in light of the specific decree in 1620 that only books giving a hypothetical treatment could receive such permission.

In November 1823, the Inquisition asked Olivieri to answer various questions regarding his desire to remove the five books presently on the *Index* (Copernicus, Foscarini, Zuniga, Galileo and Kepler). In December, the Inquisition discussed Olivieri’s answers. Here are the concluding notes of that meeting:

Without place, without time (Rome, 1823 XI)
Vol. II, p. 749 (draft by unidentified hand)

Copernican System: The Vote regarding the Very Reverend Father Olivieri Commissioner to be joined. Based on the evaluation which the Messrs. Consultors did in the Council of this November 10th on the subject of the Vote of this Very Reverend Father Commissioner on the Copernican System, he laid out an appendix which, together with said Vote, is folded to

Chapter 6: The 1820 Imprimatur and 1835 Index

Your Very Revered Father to be taken into consideration in the council meeting of the first Monday of next December which will take place at exactly 16 o'clock. You will be pleased to pass the entire position to the Very Reverend Father Abbot Cappellari after having considered it, who is requested to bring it back with himself to send it back to the Holy Office.

No. 3 Father Vincenzo da Massa to Father Abbot Cappellari.³²³

We notice here that one of the Consultors in this session of the Holy Office is "Father Abbot Cappellari." This is very significant, since he would go on to become Pope Gregory XVI in 1831, the papal reign in which the books of Copernicus, Foscarini, Zuniga, Galileo and Kepler are taken off the *Index of Forbidden Books* in 1835. The ramifications of Cappellari's involvement in the Settele affair with the decision on the *Index* in 1835 will be taken up in our next section.

As noted, by December 1820 the case was returned to the Holy Office who, under Olivieri's direct leadership, decided to approve the imprimatur, which received no objection from the pope. The imprimatur was given to Settele in January 1821. But, as noted, in April 1822, Pietro Odescalchi sought to publish an extract of Settele's book but Anfossi refused to give him an imprimatur. In September 1822, the Holy Office, still under the leadership of Olivieri, issued a decision forbidding the Master of the Sacred Palace to refuse imprimaturs to books "teaching the movement of the earth and the immobility of the sun." As it stands, Olivieri's plans were simply to go around Anfossi and ignore the stipulation of the Fifth Lateran Council that the Master of the Sacred Palace had sole right to permit the printing of books. Anfossi, fighting Olivieri to his last breathe, rejected the order. The pope, as Mayaud notes, "does not want to get in conflict with Anfossi, on whom he depends permanently." Suddenly, with no recorded discussion, Anfossi finally concedes in November 1822 to release the imprimatur.

The historical context of the situation may help in understanding the pressure Anfossi was under as well as the weak response from Pius VII in his defense. By 1820, Pius VII had only been restored to his Vatican home for a mere seven years, after having been incarcerated in Florence from 1809 to 1814 by Napoleon's armies. Several accounts reveal that during this time Pius VII was in ill health and that he seemed somewhat ambivalent about the whole ordeal with Settele. On the one hand, the author of the March 28, 1820 *Acta* refers to Pius VII's acknowledgment of the Holy Office's allowance for Settele's imprimatur; on the other hand he emphasizes what he sees as the "indolence and the dullness of this same Pontiff."³²⁴ That such a scurrilous statement about the pope would appear

in the *Acta* is quite surprising. Nevertheless, it does suggest that Oliveiri and Grandi were strong-arming both the pope and the Holy Office against Anfossi and taking advantage of the pope's kindness and ill health. As Mayaud notes:

Now, during the phase of 1822, concerning the publication of an extract of Settele's book in the 'Giornale Arcadico,' an allusion is made several times about the sickness or the state of weakness of the pope, and one cannot underestimate the importance of this fact at this time. It is sure that one of the remarkable traits of Pius VII was, as Olivieri says, that "the pope does not want to fight with anyone."³²⁵

On August 23, 1820, Pius VII told Olivieri that "it was good not to have the decree [in favor of Settele's imprimatur] published, since the impression of the book is a document of weight," with Olivieri commenting, "I have told the pope that now Father Anfossi will yield, and the pope has made a gesture with the hand as a sign of disdain." Of course, Settele, as biased as Olivieri was, comments in his diary, "he [Pius VII] did not want to have the decree published in order not to be ridiculed, for the opinion [of the earth's movement] was already for some time established, [and] that in Rome one is not troubled any more about the affair."³²⁶ The point to be made here is that Pius VII continued to show ambivalence, if not reticence, throughout the whole affair. In the final approval of Settele's imprimatur on September 11, 1822, Mayaud notes that Pius VII "who in his unsteady health condition at that time did not think to be obliged to attend it, manifesting thus perhaps his great tendency to compromise."³²⁷ And as we previously noted, Pius VII was already under duress due to Olivieri's false claims concerning the reasons the 1616 and 1633 Church had condemned heliocentrism.

As noted, just six years prior the Vatican had been turned into little more than a Napoleonic police-state. In his siege of Vatican property, Napoleon had confiscated all the documents dealing with Galileo's trial and had them put in a library in France. They were not returned until 1843, by happenstance. Hence, in the period between 1820-1835, when the Vatican was making crucial decisions regarding the matter of Galileo and heliocentric cosmology, it had no access to the very documents the Church had published between 1616 and 1633. It is in the context of such governmental upheaval and a vacuum of documentation that Settele's imprimatur is issued in 1820 and Galileo's name is removed from the Index in 1835.

The missing historical records become a very significant factor in light of the fact that the Congregation of the Index had already gone on

record in 1765 in the case of Joseph Lalande by stating that Galileo's *Dialogo* could not be approved unless the condemnation issued at his trial in 1633 was rescinded.³²⁸ Faced with no direct documentation of Galileo's trial, the Inquisitors of the Settele affair could only consult the 1758 decision under Benedict XIV. As Finocchiaro puts it:

The Inquisition, unable to consult the file of Galilean trial documents that had gone missing after the Napoleonic transfer, did the next best thing; it requested the Congregation of the Index to provide the file on the 1758 edition of the Index, which contained the partial and silent retraction of the anti-Copernican ban of 1616. The Index delivered the file to the Inquisition on March 28 [1820]. In the meantime, newspapers in Germany, France, and Holland were publishing articles about this ecclesiastical censorship.³²⁹

Without the historical records of 1616 and 1633, we might say that the 1820 Inquisition was hobbling on one leg and perhaps should have postponed their decision until the records could be retrieved. Perhaps Olivieri would not have been so quick to impose his “devastating mobility” or “elliptical orbits” excuses into the reasons Galileo's heliocentrism was condemned since, with the 1616 and 1633 records on hand, it would have been easy for the Consultors to see that the seventeenth century magisterium entertained no such fanciful notions. Instead, as the quote above reveals, the European newspapers were creating undue pressure on the Vatican, complaining of censorship against Settele and clamoring for a favorable decision toward Copernican cosmology.

Although Finocchiaro refers to the 1758 decision as a “partial and silent retraction of the anti-Copernican ban of 1616,” this assessment is misleading for, as we noted previously, not only were the names of Copernicus, Foscarini, Zúñiga, Kepler and Galileo kept on the *Index* precisely because they were condemned for teaching heliocentrism, more importantly, there was no specific provision made in 1758 (and Finocchiaro does not cite one) which stated that “all books teaching the earth's motion and the sun's immobility” could now present heliocentrism *as a thesis rather than a hypothesis*, a fact not readily admitted by Galileo historians. Logically, it would be self-contradictory for the 1758 *Index* to continue the ban on Copernicus, Foscarini, Zúñiga, Kepler and Galileo for teaching, as a thesis, that the Earth moves, but then allow “all [other] books” the privilege to do the exact opposite with impunity. Moreover, if the *Index*, both in 1758 and on through to 1820, approved of no treatise that regarded Copernicanism as a thesis, on what precedent could the 1820

Chapter 6: The 1820 Imprimatur and 1835 Index

Inquisition approve Settele's book which treated heliocentrism as a thesis? The wording of the 1820 decision indicates that it was bound by what was decreed in 1758. It states:

Their Eminences have decreed that, for the time being, now and in future, a license is not to be refused to the Masters of the Sacred Apostolic Palace for the printing and publication of works dealing with the mobility of the earth and the immobility of the sun according to the common opinion of modern astronomers, as long as there are no other contrary indications, on the basis of the decrees of the Sacred Congregation of the Index of 1757 and of this Supreme Holy Office of 1820.³³⁰

Since the 1758 decision did not make any provision to treat Copernicanism as a thesis, it should have served as a "contrary indication" to the Inquisitors of 1820, warning them against approving thesis-laden Copernican treatises. Somehow, however, the "contrary indications" were side-stepped between the years of 1820 and 1835. Interestingly enough, in Olivieri's lengthy Summation to the Inquisition in 1820 for the purpose of persuading it to approve Settele's *Elements of Astronomy*, he faults Anfossi, claiming that Anfossi "cannot be excused for ignoring the *Index* that has been in force since 1758 and declaring prohibited books that certainly are no longer such."³³¹ But since in 1758 neither the books that already presented heliocentrism as a thesis were excused (*viz.*, Copernicus, Foscarini, Zúñiga, Kepler and Galileo), nor was there any specific provision to allow "all [other] books" to treat heliocentrism as a thesis, it seems that Olivieri is the very one "ignoring" the 1758 decision, or at least reading into it more than what is there.

Conclusion from the Settele Affair

All in all, with the fallacious arguments that Olivieri submitted in his Summation, the Congregation of the Index was grossly ill-advised when it came time to deciding whether to grant an imprimatur to Canon Settele. Under such duress and false information, the whole affair is tainted from start to finish. In the end, however, Olivieri may have been successful in obtaining an imprimatur for Settele but this did not mean the Church's condemnation of heliocentrism had been rescinded. Imprimaturs given to private books have no authority in overturning Congregational decrees approved by supreme pontiffs and/or facilitated by a canonical trial, as was the case in 1616 and 1633. In face of the fact that the permission initially given to Galileo's *Dialogo* was later rescinded by the 1633 magisterium because it found the imprimatur was issued under false pretenses, makes

the Settele imprimatur more an anomaly than a precedent. IF it is found that the Settele imprimatur was granted under false pretenses, it can as easily be rescinded. In addition, Copernicus, Zúñiga, Foscarini, Kepler, and Galileo remained on the Index. Hence, the Settele affair proved only one thing, namely, that a high-placed cleric could convince his peers with pretentious scientific claims what neither he nor they could prove since the science of cosmology was still in its infancy. As we noted in the case of Bradley versus Airy, science would not mature nearly enough to shed sufficient light on Olivieri's claims until long after he and his contemporaries had died. And when it shed its light, it would show that Olivieri's claims were entirely fallacious.

As for Pius VII's role in the Settele affair, although there are various accounts that, after receiving Olivieri's report, he helped smooth the pathway for Settele to obtain the imprimatur, no document exists containing a quote directly from Pius VII endorsing either Settele or heliocentrism.³³² And there is no document concerning the Settele affair that has the signature of Pius VII. As noted previously, the only thing Pius VII did was "wave his hand in disdain."

The 1835 Index of Pope Gregory XVI

The second session of the Consultants took place on December 1, 1823. Here again the decision was postponed on what to do with the books presently on the *Index*. Olivieri did not choose to bring up the issue with the new pope, Leo XII (1823 – 1829) or his successor Pius VIII (1829 – 1830). By 1831, however, the mood had changed with the election of Gregory XVI.

As noted, in October 1822 Olivieri published his "reasons" why Copernicus, Zúñiga, Foscarini, Kepler, and Galileo were kept on the *Index* and why they should now be taken off. In November, the Inquisition asked him to answer various questions regarding his thesis. In December, it discussed Olivieri's answers with the help of two other experts, B. Garofalo and Bartolomeo Cappellari. Their names are listed on the record of the Vote of the Consultors:

VOTE OF THE CONSULTORS

Without place (Rome, 1823 XI)

Vol. I, foliio, 339v (autograph by Cuneo-Ornaro, assessor)

Domini Consultores fuerunt in Voto rescribendi Dilata, et eadem Positio iterum distribuatur. Dominis Consultoribus, cum

observationibus exarandis a **R. Patribus Cappellari, et Garofalo.**³³³

Although there are no historical records with the results of that discussion, we can assume that Bartolomeo Cappellari carried them in his mind when he became pope in 1831 as **Gregory XVI**. It is obvious that there is an intimate connection between what Gregory XVI did in 1835 and what he as Cardinal Cappellari had already approved in 1823. Two years after he was elected, on May 20, 1833, apparently based on Olivieri's dubious argumentation presented at the December 1823 meeting and approved by the Consultors, Gregory XVI, or someone under him, decided that the new *Index of Forbidden Books* would omit the works of Copernicus, Zúñiga, Foscarini, Kepler, and Galileo. It was no doubt the final stroke of the Olivieri crusade and the very accomplishment of what the Consultors had explicitly denied to Olivieri in 1823. The equivocation speaks for itself.



Gregory XVI's decision was made in the face of such incidents as astronomer Giuseppe Piazzi declaring in 1827 that "the Copernican system was not as certain and well demonstrated as commonly believed,"³³⁴ and Le Seur and Jacquier's continuing *Declaratio* on Newton's *Principia* in the Glasgow edition of 1833, which read "...But we profess obedience to the decrees made by the Supreme Pontiffs against the movement of the earth."³³⁵ But it was also made, as Finocchiaro notes, in the midst of incidents such as the "Spanish bishop who consulted the Roman Inquisition about whether the Copernican system could be maintained, and instead of a definite answer he was sent the recent rulings stemming from the Settele episode."³³⁶

His Holiness, having read this report, has ordered in response to the Father Secretary that in the new edition the authors, dealing with the mobility of the earth and the immobility of the sun, like Galilei, Copernicus, *etc.*, should be omitted. However one should not attach any judgment about this case. Concerning the edition of the Index, which was presented to him, he ordered it to be done thoroughly and to be published.³³⁷

Gregory XVI decided in favor of removing the five books. As Mayaud sees it, "A hypothesis presents itself directly: Gregory XVI, when he was consultant of the Holy Office in 1823, understood the situation

exactly as Olivieri did...” Settele says much the same in his diary: “the pleasant remarks of Cappellari, with his ‘let the earth turn’ are a sign of his complete agreement with Olivieri.”³³⁸ Settele is referring to the remark he heard Gregory XVI say in his 1833 audience: “...to turn the head or turn the earth? ...but, let me turn the earth so that they cannot turn their head...”³³⁹ Accordingly, Olivieri wrote and signed the following sometime after 1835:

After such erroneous teachings were corrected after the gravity of air was discovered and properly appreciated; with the accumulation of the astronomical data with tireless observations and meditations, the Holy See—which already from the first examination had permitted the hypothesis—at first did not progress to make the scholars mistrustful; then it became, with the passage of time, at the decrees of indulgence of 1757, 1820, 1822 finally after the printing of the *Index* of 1819 then following the very new one of 1835, the authors who by name had been prohibited or suspended as a result of the doctrine of the mobility of the earth in 1616, 1619, 1620, 1633 did not appear, the need to keep them no longer being considered.³⁴⁰

Maurizio Benedetto Olivieri, the point man for the whole ordeal, reveals by his words, “after the gravity of air was discovered and properly appreciated; with the accumulation of the astronomical data with tireless observations” what was behind it all. The simple fact is the Church became influenced by the “opinion of astronomers” and decided to sacrifice her tradition and her legacy for theories and observations no one could prove one way or the other. Olivieri, who had probably been whispering in the ear of Gregory XVI since 1823 and who died within a year of the pope in 1845, made the issue depend on the “opinions of astronomers” from the beginning. Anfossi, faithful Catholic that he was, was unequipped to deal with Olivieri on that level, and Olivieri knew it, and he then convinced Cappallari of it.

That Gregory XVI would stoop to removing these condemned books without so much as a word of explanation suggests that he was not acting with much circumspection, perhaps sweeping the issue under the rug instead of dealing with it directly. After two centuries of dialogue, decrees, condemnations and worldwide brouhaha initiated by one of the highest profile events in the Church’s history (*i.e.*, the silencing and condemnation of Galileo and heliocentrism between 1616 and 1633), all Gregory XVI provides for his flock is silence, but which, in reality, is a departure from his patrimony and papal predecessors. Although Gregory lavished praise on the “opinions of modern astronomy,” he did not provide one word of

explanation or consolation to his parishioners for his unprecedented upheaval of Catholic tradition and authority. Did he think that by not providing an explanation no one would question the blatant contradiction he set up between himself and Paul V and Urban VIII? Were we supposed to ignore the fact that he made his papal predecessors, not to mention the Church Fathers, the Council of Trent and its Tridentine Catechism, to be ignorant clerics who were not smart enough to figure out that not only do the “opinions of modern astronomers” somehow have the last word in determining Catholic teaching, but the Church should have never entered the arena in the first place with claims that Scripture must be interpreted literally as the Church had always done? What a travesty. Cappellari, hook, line and sinker, took the bait of Olivieri’s deceptive “science” in 1823; and he made it an act of a pope in clandestine silence in 1835. He probably thought he made the Church twice as strong, but in reality he only made it a hundred times as weak, for now we are saddled with a Church that contradicts herself – a much bigger problem than contradicting the claims of science. Interestingly enough, within this hot crucible Gregory engaged in mere hand-waving, as did Pius VII with Settele, by not signing any document or the Index to verify his decision. He merely had his underlings remove the five books without comment. Apparently, we are supposed to figure out the official reason for his decision on our own; or, perhaps, Gregory was indicating that he had no good reason for removing them, which meant that he, similar to Pius VII, was acting under duress, or implying that the decision could easily be reversed in the future if the “opinions of astronomers” changed, just as Galileo’s imprimatur had been reversed. In either case, the proper protocol was deliberately ignored.

Mayaud, who is himself a heliocentrist and thus favors the 1835 *Index*, tries to defend Gregory’s breach with tradition by saying “the pontificate of Gregory XVI (1830-1846) was profoundly marked by an opposition to the liberal movements, which now spread all over Europe following the revolution of July 1830 in France, and that we have no direct witness at all of him being open to ‘a sound but modern philosophy.’”³⁴¹ Perhaps it never crossed Mayaud’s mind that it was shortly after 1758 when, as Mayaud claims, Benedict XIV allowed books teaching the heliocentric view, that the first stage of the French “revolution” came upon Europe three decades later in 1789; and it was the second phase of that social revolution that came in 1830, just seven years after Settele received his imprimatur and became the benchmark for the Church’s capitulation to science. It was only two decades after Pope Gregory’s fateful removal of Galileo from the Index that Charles Darwin in 1859 came with his newfangled evolution; and William James and Sigmund Freud in the latter 1800s and early 1900s with their psychology and psychoanalysis; and the Church was virtually powerless to stop them after

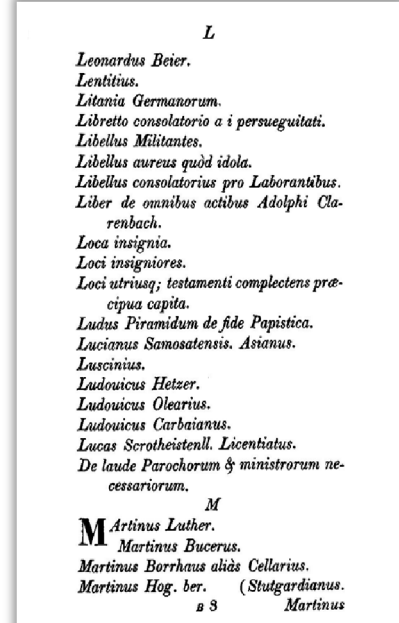
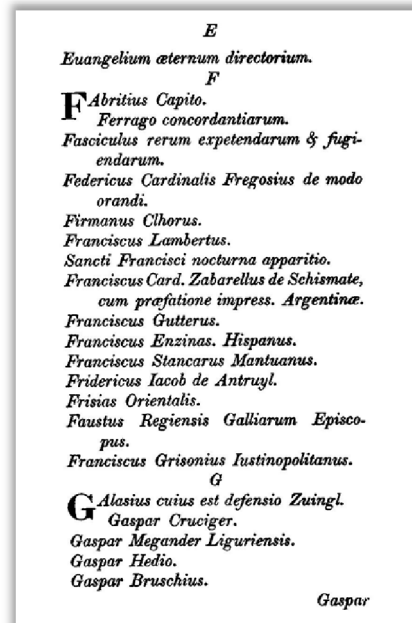
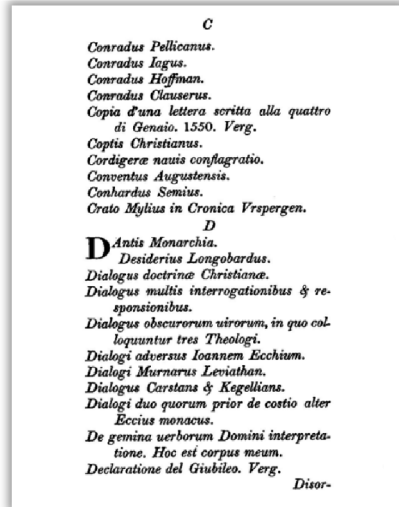
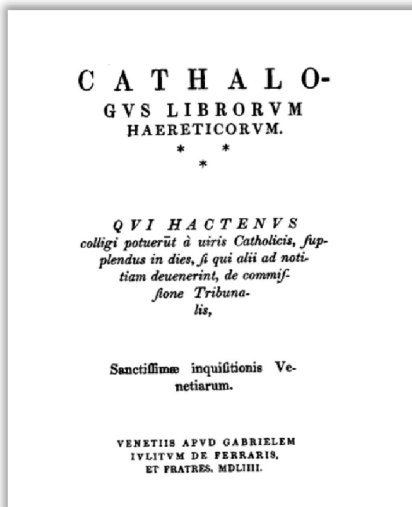
modernism's poster boys, Galileo and Copernicus, were exonerated in the 1835 *Index*.

Mayaud's effort to paint Gregory XVI as one who "opposed liberal movements" is quite a stretch. Liberalism was not the only problem for the Church at this time. In this little crucible between 1758 and 1835, Scientism became the new and formidable foe that, although it often ate at the same table as Liberalism, was an authority all its own and possessed better camouflage. Few churchmen could stand up to the likes of a Newton, a Bradley, a Pierioni, or the dozens of other telescope-watching or equation-writing scientists in white lab coats who convinced the world that they held humanity's only accurate eyes and perceptible ears, along with their atheistic interpretations to verify them. Gregory XVI was apparently deceived by those who were waving the liberalism carrot in one hand while coming by stealth with the scientific wolf in the other.

Whatever the official level of his quiet move, Gregory XVI became the watershed for the Catholic Church's capitulation to the status quo of modern science. Gregory had a simple choice: either he could accept the God of his forefathers or accept the gods behind the "opinions of astronomers." He chose the latter. It is no surprise, then, that during his stint as Consultor and Pope between 1820 and 1846, all hell broke loose on the Church in the latter half of the 1800s and leading into the 1900s. Both Liberalism and Scientism became stronger and stronger while chapter after chapter of Genesis became weaker and weaker. Things would never be the same after Gregory's fateful decision.

Gregory XVI's little quip to Settele in 1833: "...to turn the head or turn the earth? ...but, let me turn the earth so that they cannot turn their head..."³⁴² probably seemed so wise at the time. He was going to start the Earth turning whereas 1835 years prior, under the vigilance of the tradition before him, the Church kept the Earth still. Gregory apparently thought he was going to set everyone straight because, like his cohort Olivieri, he believed he had the inside scoop on scientific truth that the Church before him didn't possess. In his quip, "to turn the head or turn the Earth," perhaps the "head" is himself, the head of the Church. Should he turn his head away from what everyone saw as "the clear proofs of science" that the Earth was turning? No, he was far too convinced a Newtonian to let that happen. Instead, he would turn the Earth so that no one could turn "their head," that is, their head the pope, back to the medieval age.

Chapter 6: The 1820 Imprimatur and 1835 Index



Pages from the 1835 *Index of Forbidden Books*. From top left to right:

- (1) title page;
- (2) page which no longer contains the name of Copernicus;
- (3) page which no longer contains the name of Galileo;
- (4) page which retains the name of Martin Luther

Or perhaps “head” refers to the men of the world who had turned their heads to see what the pope would do. The newspapers had been pointing the finger at the Church for many years, telling her how backward she was for not accepting the latest “opinion of modern astronomers.” In this case, the pope decided to turn the Earth so that the men of the world could no longer turn their collective head in derision toward him. Either way, the pope capitulated on the flimsy evidence that Scientism showed him, just as Adam and Eve capitulated on the hope contained in a piece of fruit. That Newton’s apple and Satan’s apple accomplished the same task of exposing the faithlessness of God’s chosen may be no coincidence. Gregory’s only excuse is that he did so under the duress of Olivieri’s falsehoods, and thus he is not culpable.

As we have noted, the huffing and puffing of science against the Church in the days of Gregory XVI is not unlike the nursery rhyme of the Big Bad Wolf. If only the Church had kept its house of brick instead of trading it in for a house of straw things would have been quite different. The boastings of Newton and Bradley have been shown to be mere wolf’s breath. Although in Gregory XVI’s reign it was firmly believed that a variety of celestial phenomena proved the Earth was revolving around the sun, they would all be discredited in the next 150 years, and as it was done so simply and elegantly. To put this in layman’s terms, we quote from a popular book on modern cosmology:

Schoolchildren learn that we live on a planet that revolves on its axis and orbits the Sun, that Nicolaus Copernicus introduced this controversial idea in the sixteenth century, and that some men were persecuted for believing it. But in the end...“all settled”...case closed....Yet our own contemporary science backs away and tells us that when it comes to proving what moves and what doesn’t, and whether or not there is an unmoving “center,” no one can make an airtight case that any answer is right or wrong. Pick what you will, the Moon, Mars, the Sun, the Earth, your great aunt’s dining table – the options are infinite – and it’s possible to come up with that as the unmoving center. In fact you are being parochial if you limit the exercise to our planetary system. It is possible to describe the entire universe using any chosen point as the unmoving center – the Earth will do very well – and no one can prove that choice is wrong....Scientists today [merely] prefer to picture everything in motion and nothing as being the center....[but] no one can prove that the Earth moves.³⁴³

Chapter 6: The 1820 Imprimatur and 1835 Index

Of course, since science was never the main basis for the Church's condemnation of Galileo's claims, those who ramrodded the removal of Galileo from the Index couldn't help but make science the main issue so as to make the Church of the 1600s look inept and ignorant for even broaching such issues, much less deciding them. Olivieri's comment (*e.g.*, that Galileo could not explain how air could be held to the Earth by gravity, or did not include elliptical orbits of the planets, or that they understood the sun to be motionless), is one of the most specious distortions of the historical record ever perpetrated by a Catholic cleric. In no instance of the over 7000 documents of the Galileo affair from the seventeenth century is there any mention of such criteria as the reasons Copernicus or Galileo were condemned. There existed only one issue at the trial of Galileo, namely, Galileo's insistence that the Earth revolved around the sun. The magisterium answered this in two parts. It condemned the assertion that the sun did not revolve around the Earth as "formally heretical," and it condemned the assertion that the Earth was not motionless in space as "erroneous in faith." It would have made no difference if Galileo had believed the Earth moved in an ellipse or a circle, or whether he could explain why Earth's air and water were not disturbed by rotation or translation. Any motion of the Earth was condemned because the Congregation of the Index declared, of the two bodies, the sun moved and the Earth did not. Hence, Olivieri's deliberate and desperate attempt to confuse the issue by inserting the red herrings of elliptical orbits and a "devastating mobility" is one of the most deceptive pieces of propaganda ever foisted on the Catholic Church.

The Trial versus the Index

There is another fault on the part of Gregory XVI. As noted, when in 1765 French astronomer Joseph Lalande sought to have Galileo's name removed from the *Index*, he was told by the head of the Congregation of the *Index* that no such removal was possible until the sentence given to Galileo at the trial of 1633 was formally and officially rescinded.³⁴⁴ The importance of this canonical protocol cannot be underestimated. If there is no legal exoneration of Galileo, then, according to canon law, Galileo and his heliocentric theory remain condemned to this very day, and thus, the removal of Galileo's name from the 1835 Index was both uncanonical and inconsequential.³⁴⁵ Since the Church, to this very day, has not initiated any official, formal, or legal rescission of either the condemnation against heliocentrism or against Galileo, both must remain in force, regardless of whether his name was taken off an *Index*. An *Index* can revise an *Index*, but an *Index* cannot reverse or revise the results of a canonical trial. Hence, the only thing accomplished by removing Galileo's name from the *Index* is

the creation of a glaring contradiction in ecclesiastical protocol. In the end, since the 1616 and 1633 decrees and trial both condemned the heliocentric theory as “formally heretical” and Galileo as being “vehemently suspect” of that formal heresy, it is not only Galileo who was condemned, but the heliocentric theory itself, and it remains in force until if and when it is legally abrogated by the Church. Legally speaking, everything remains as it was in 1633.³⁴⁶ Later we will see that we can now understand why John Paul II’s 1981 reinvestigation into the Galileo affair did not seek to overturn the decision of Galileo’s trial, but, as Cardinal Casaroli said, to “rethink” what happened. As the Vatican Secretary of State said by orders of John Paul II to the Galileo commission on July 3, 1981:

The aim of the various groups should be to rethink the whole Galileo question, with complete fidelity to historically documented facts and in conformity to the doctrine and culture of the time, and to recognize honestly, in the spirit of the Second Vatican Council and of the quoted speech of John Paul II, rights and wrongs from whatever side they come. This is not to be the review of a trial or a rehabilitation, but a serene and objectively founded reflection, in the context of today’s historical-cultural epoch.³⁴⁷



“...to the question whether or not the motion of the Earth in space can be made perceptible in terrestrial experiments. We have already remarked...that all attempts of this nature led to a negative result. Before the theory of relativity was put forward, it was difficult to become reconciled to this negative result.”
Physicist, Albert Einstein³⁴⁸

“Briefly, everything occurs as if the Earth were at rest...”
Physicist, Henrick Lorentz³⁴⁹

“A great deal of research has been carried out concerning the influence of the Earth’s movement. The results were always negative.”
Physicist, Henri Poincaré³⁵⁰

"The data [of Michelson-Morley] were almost unbelievable... There was only one other possible conclusion to draw — that the Earth was at rest." Physicist, Bernard Jaffe³⁵¹

"We can't feel our motion through space, nor has any physical experiment ever proved that the Earth actually is in motion." Historian, Lincoln Barnett, foreword by Albert Einstein³⁵²

"Thus, even now, three and a half centuries after Galileo's condemnation by the Inquisition, it is still remarkably difficult to say categorically whether the earth moves, and, if so, in what particular sense." Physicist, Julian Barbour³⁵³

"There is no planetary observation by which we on Earth can prove that the Earth is moving in an orbit around the sun." Physicist, I. Bernard Cohen³⁵⁴

"So which is real, the Ptolemaic or Copernican system? Although it is not uncommon for people to say that Copernicus proved Ptolemy wrong, that is not true....one can use either picture as a model of the universe, for our observations of the heavens can be explained by assuming either the earth or the sun to be at rest." Physicist, Stephen Hawking³⁵⁵

"Whether the Earth rotates once a day from west to east, as Copernicus taught, or the heavens revolve once a day from east to west, as his predecessors believed, the observable phenomena will be exactly the same. This shows a defect in Newtonian dynamics, since an empirical science ought not to contain a metaphysical assumption, which can never be proved or disproved by observation." Physicist, Dennis Sciama³⁵⁶

Chapter 7

Other Popes of the 19th and 20th Centuries

1893: Pope Leo XIII's Encyclical: *Providentissimus Deus*

The encyclical of Pope Leo XIII, *Providentissimus Deus* ("The Providence of God"), contains a polite gesture toward the claims of science, yet without any official or formal concession to its specific propositions. The encyclical is subtitled: "On the Study of Sacred Scripture." Here Pope Leo reiterated the principles of Catholic hermeneutics that had been in practice for more than a millennia and a half, yet he did not mention anything about Galileo or any other related issue concerning the cosmological controversies of the 16th and 17th centuries. In fact, although Leo XIII's encyclical is often cited to support the heliocentric position, *Providentissimus Deus* is actually one of the Church's strongest statements on the literal interpretation of Scripture and the cautions that need to be exercised against the claims of modern science.³⁵⁷ We will quote and analyze these portions of his encyclical. The more significant statements have been underlined for emphasis:



18. In the second place, we have to contend against those who, making an evil use of physical science, minutely scrutinize the Sacred Book in order to detect the writers in a mistake, and to take occasion to vilify its contents. Attacks of this kind, bearing as they do on matters of sensible experience, are peculiarly dangerous to the masses, and also to the young who are beginning their literary studies; for the young, if they lose their reverence for the Holy Scripture on one or more points, are easily led to give up believing in it altogether. It need not be pointed out how the nature of science, just as it is so admirably adapted to show forth the glory of the Great Creator, provided it be taught as it should be, so if it be perversely imparted to the youthful intelligence, it may prove most fatal in destroying the principles of true philosophy and in the corruption of morality. Hence to the Professor of Sacred Scripture a knowledge of natural science will be of very great assistance in detecting such attacks on the Sacred Books, and in refuting them. There can

never, indeed, be any real discrepancy between the theologian and the physicist, as long as each confines himself within his own lines, and both are careful, as St. Augustine warns us, “not to make rash assertions, or to assert what is not known as known.” If dissension should arise between them, here is the rule also laid down by St. Augustine, for the theologian: “Whatever they can really demonstrate to be true of physical nature, we must show to be capable of reconciliation with our Scriptures; and whatever they assert in their treatises which is contrary to these Scriptures of ours, that is to Catholic faith, we must either prove it as well as we can to be entirely false, or at all events we must, without the smallest hesitation, believe it to be so.”

In the next few sentences, Leo XIII speaks about the language of Scripture. This is the section to which those advocating a heliocentric model of the universe often appeal, but we will see that the pope says nothing about cosmology or the application of his hermeneutical principles to the specific question of how we are to understand the revolutions of the celestial bodies. As we noted earlier in our rebuttal of Galileo’s claim for figurative interpretation, such instances are naturally applied to the anthropomorphic passages in Scripture (*i.e.*, those that give human body parts to God), or to various figures of speech that are commonly used in all cultures, both ancient and modern. The pope states:

To understand how just is the rule here formulated we must remember, first, that the sacred writers, or to speak more accurately, the Holy Ghost “Who spoke by them, did not intend to teach men these things (that is to say, the essential nature of the things of the visible universe), things in no way profitable unto salvation.” Hence they did not seek to penetrate the secrets of nature, but rather described and dealt with things in more or less figurative language, or in terms which were commonly used at the time and which in many instances are in daily use at this day, even by the most eminent men of science. Ordinary speech primarily and properly describes what comes under the senses; and somewhat in the same way the sacred writers – as the Angelic Doctor also reminds us – “went by what sensibly appeared,” or put down what God, speaking to men, signified, in the way men could understand and were accustomed to.

19. The unshrinking defense of the Holy Scripture, however, does not require that we should equally uphold all the opinions which each of the Fathers or the more recent interpreters have

put forth in explaining it; for it may be that, in commenting on passages where physical matters occur, they have sometimes expressed the ideas of their own times, and thus made statements which in these days have been abandoned as incorrect. Hence, in their interpretations, we must carefully note what they lay down as belonging to faith, or as intimately connected with faith – what they are unanimous in. For “in those things which do not come under the obligation of faith, the Saints were at liberty to hold divergent opinions, just as we ourselves are,” according to the saying of St. Thomas. And in another place he says most admirably: “When philosophers are agreed upon a point, and it is not contrary to our faith, it is safer, in my opinion, neither to lay down such a point as a dogma of faith, even though it is perhaps so presented by the philosophers, nor to reject it as against faith, lest we thus give to the wise of this world an occasion of despising our faith.” The Catholic interpreter, although he should show that those facts of natural science which investigators affirm to be now quite certain are not contrary to the Scripture rightly explained, must nevertheless always bear in mind, that much which has been held and proved as certain has afterwards been called in question and rejected. And if writers on physics travel outside the boundaries of their own branch, and carry their erroneous teaching into the domain of philosophy, let them be handed over to philosophers for refutation.

Although it is said that the Fathers sometimes expressed things in the ideas of their own times, Leo XIII does not give any specific examples, and thus there is no direct support for interpreting Earth-sun passages in a non-literal fashion. In fact, it goes without saying that the Fathers would speak from their own culture and use their idiomatic vocabulary since none of them would have known the culture or the idioms of the future. The Fathers, especially the Alexandrian school of exegesis, certainly were aware of the Bible’s metaphors and figurative language, but the uncompromising fact is they never applied it to passages stating that the sun revolves around the Earth or that the Earth was fixed. In addition, Leo’s remarks about “things belonging to the faith...what they are unanimous in,” would technically discount the heliocentric/geocentric debate from the discussion. First, we noted earlier, Cardinal Bellarmine argued that the Earth’s centrality and immobility were a “matter of faith,” if not so much in the explicit sense, then simply because of the fact that God is the author of Scripture, as even Leo states later in this encyclical (e.g., ¶21: “and that God, speaking by the sacred writers, could not set down anything but what was true”). Second, it is a fact that the Fathers

were unanimous in their belief in geocentrism. There was not one dissenting voice. It is perhaps the strongest unanimity the Fathers ever held on a particular topic. Hence, on both counts, faith and patristic unanimity, history shows that, barring “sun rising” or “sun setting” passages, geocentrism is not to be included in Leo XIII’s category of things to be “figuratively” interpreted or things that the Fathers expressed only “in the ideas of their times.”

Also significant in the above paragraph is Leo XIII’s comment about the mistakes in science and the overturning of scientific ideas, especially that of physics. He states:

The Catholic interpreter... must nevertheless always bear in mind, that much which has been held and proved as certain has afterwards been called in question and rejected. And if writers on physics travel outside the boundaries of their own branch, and carry their erroneous teaching into the domain of philosophy, let them be handed over to philosophers for refutation.

If there is anything of which Catholic theologians and scientists should avail themselves, it is the scientific evidence showing that heliocentrism is at best an unproven theory. These same theologians and scientists should avail themselves to an honest study of the history of science, which starkly reveals that almost every scientific theory proposed as true has been replaced by another theory that falsifies it; and that theory awaits to be replaced by yet another. In light of the new scientific evidence available, we can easily see that heliocentrism is one of those canons of physics that “has been held and proved as certain has afterwards been called in question and rejected.”

In the next paragraphs, Leo XIII makes some of the Church’s strongest statements upholding the full plenary inerrancy and inspiration of Holy Writ ever recorded. The words of Robert Bellarmine to Galileo meet their strongest echo in the solemn declarations of Leo XIII:

20. The principles here laid down will apply to cognate sciences, and especially to History. It is a lamentable fact that there are many who with great labor carry out and publish investigations on the monuments of antiquity, the manners and institutions of nations and other illustrative subjects, and whose chief purpose in all this is too often to find mistakes in the sacred writings and so to shake and weaken their authority. Some of these writers display not only extreme hostility, but the greatest unfairness; in their eyes a profane book or ancient document is accepted without hesitation, whilst the Scripture, if they only find in it a

suspicion of error, is set down with the slightest possible discussion as quite untrustworthy. It is true, no doubt, that copyists have made mistakes in the text of the Bible; this question, when it arises, should be carefully considered on its merits, and the fact not too easily admitted, but only in those passages where the proof is clear. It may also happen that the sense of a passage remains ambiguous, and in this case good hermeneutical methods will greatly assist in clearing up the obscurity. But it is absolutely wrong and forbidden, either to narrow inspiration to certain parts only of Holy Scripture, or to admit that the sacred writer has erred. For the system of those who, in order to rid themselves of these difficulties, do not hesitate to concede that divine inspiration regards the things of faith and morals, and nothing beyond, because (as they wrongly think) in a question of the truth or falsehood of a passage, we should consider not so much what God has said as the reason and purpose which He had in mind in saying it – this system cannot be tolerated. For all the books which the Church receives as sacred and canonical, are written wholly and entirely, with all their parts, at the dictation of the Holy Ghost; and so far is it from being possible that any error can co-exist with inspiration, that inspiration not only is essentially incompatible with error, but excludes and rejects it as absolutely and necessarily as it is impossible that God Himself, the supreme Truth, can utter that which is not true. This is the ancient and unchanging faith of the Church, solemnly defined in the Councils of Florence and of Trent, and finally confirmed and more expressly formulated by the Council of the Vatican. These are the words of the last: “The Books of the Old and New Testament, whole and entire, with all their parts, as enumerated in the decree of the same Council (Trent) and in the ancient Latin Vulgate, are to be received as sacred and canonical. And the Church holds them as sacred and canonical, not because, having been composed by human industry, they were afterwards approved by her authority; nor only because they contain revelation without error; but because, having been written under the inspiration of the Holy Ghost, they have God for their author.” Hence, because the Holy Ghost employed men as His instruments, we cannot therefore say that it was these inspired instruments who, perchance, have fallen into error, and not the primary author. For, by supernatural power, He so moved and impelled them to write – He was so present to them – that the things which He ordered, and those only, they, first, rightly understood, then willed faithfully to write down, and

finally expressed in apt words and with infallible truth. Otherwise, it could not be said that He was the Author of the entire Scripture. Such has always been the persuasion of the Fathers. “Therefore,” says St. Augustine, “since they wrote the things which He showed and uttered to them, it cannot be pretended that He is not the writer; for His members executed what their Head dictated.” And St. Gregory the Great thus pronounces: “Most superfluous it is to inquire who wrote these things – we loyally believe the Holy Ghost to be the Author of the book. He wrote it Who dictated it for writing; He wrote it Who inspired its execution.”

21. It follows that those who maintain that an error is possible in any genuine passage of the sacred writings, either pervert the Catholic notion of inspiration, or make God the author of such error. And so emphatically were all the Fathers and Doctors agreed that the divine writings, as left by the hagiographers, are free from all error, that they labored earnestly, with no less skill than reverence, to reconcile with each other those numerous passages which seem at variance – the very passages which in great measure have been taken up by the “higher criticism;” for they were unanimous in laying it down, that those writings, in their entirety and in all their parts were equally from the afflatus of Almighty God, and that God, speaking by the sacred writers, could not set down anything but what was true.

1921: Pope Benedict XV's Encyclical: *In Praeclara Summorum*

On April 30, 1921, Pope Benedict XV promulgated the encyclical titled: *In Praeclara Summorum*, commemorating the memory of the poet Dante (1265-1321). In it the pope makes mention of the various antiquated ideas held by Dante and his contemporaries, but through it all Dante was a faithful son of the Church and believed in the basic idea that God created the world and governs it. In the midst of this memorial, the pope says that the Earth “may not be the center of the universe.” He writes:



If the progress of science showed later that that conception of the world rested on no sure foundation, that the spheres imagined by our ancestors did not exist, that nature, the number and course of the planets and stars, are not indeed as they were then thought to

be, still the fundamental principle remained that the universe, whatever be the order that sustains it in its parts, is the work of the creating and preserving sign of Omnipotent God, who moves and governs all, and whose glory *risplende in una parte piu e meno altrove*; and though this earth on which we live may not be the center of the universe as at one time was thought, it was the scene of the original happiness of our first ancestors, witness of their unhappy fall, as too of the Redemption of mankind through the Passion and Death of Jesus Christ.

Little if anything can be extracted from this encyclical for the cause of heliocentrism. First, the encyclical is not purporting to be a treatise on either cosmology or cosmogony, and it is the understanding of the Church that no dogmatic teachings are to be gleaned from an ecclesiastical document unless said document specifically addresses and defines the issue at hand. In this case, the encyclical is merely an exoneration of Dante and his works, not a teaching on whether the Earth is the center of the universe. Popes may often gather popular sentiments or ideas from the surrounding culture in order to enhance the basic message they wish to teach, but they have no dogmatic standing whatsoever.

Second, the pope himself is aware of the conditional and speculative nature of his reference to cosmology since he carefully couches his appeal with the subjective word “may” in the sentence: “and though this earth on which we live *may* not be the center of the universe as at one time was thought.” To say that the Earth *may not* be the center is as equally indicative as saying that it *may* be the center. In actuality, the fact that the pope did not confirm the scientific consensus, which by this time (1921) firmly believed in heliocentrism, means that he was not allowing himself to be pressured by the scientific community into adopting a non-central Earth as an indisputable fact. Although the pope may have known about the decrees of 1616 through 1664, he was probably under the impression, as many are today, that those decrees had been relaxed somewhat in 1822 and 1835 (yet it is safe to say that he was not aware of the subterfuge behind those two latter events). Since he put no particular study into the question, it is only reasonable that he might have a hesitancy regarding the Church’s official position on the matter. This is to be expected since it is common for most Catholics to have inadvertently but ignorantly relied on the “opinion of astomoners” to exonerate heliocentrism to the status of a scientific fact that it should not have.

Technically speaking, discussions regarding whether the Earth is the center of the universe must take into account the difference between the geometric center and the center of mass. In the Aristotelian model from which Dante is working, little was known about the center of mass.

Barring Ptolemy's use of the equant and deferent, which, giving the illusion of an off-center pivot point which, in turn, affected the speed of the revolving body in relation to the Earth, the Aristotelian universe comprehended the Earth as it would the center of a circle. Modern physics understands the center in two ways: geometrically, as the center of a circle, the other dynamically, as the central point of all the mass in the system. The center of mass is what causes a tennis racket to wobble if it is thrown into the air. The reason for this erratic gyration is that the center of mass for the tennis racket is not at the geometric center but more toward the heavier end of the racket. All the mass of the racket will rotate proportionately around the center of mass, not the geometric center, regardless of how the racket is shaped. In the same way, the Earth may be the center of mass of the universe but not the geometric center. Hence Benedict XV's reference to the Earth perhaps not being "the center of the universe" could possibly be true from the geometric perspective employed by Aristotle, Ptolemy, and even Tycho Brahe, but not necessarily true from a center of mass perspective. If that is the case, Benedict's statement makes perfect sense, even in its conditional form.

Lastly, we cannot leave the teachings of Benedict XV without remarking on his warning regarding the interpretation of Scripture. Whereas Galileo and his followers were wont to interject a figurative interpretation on any scriptural passage that did not fit their scientific views, Benedict XV decried such a methodology. He writes:

By the doctrine of Jerome those statements are well confirmed and illustrated by which Our predecessor, Leo XIII, solemnly declared the ancient and constant faith of the Church in the absolute immunity of Scriptures from any errors... And, introducing the definitions of the Councils of Florence and Trent, confirmed in the Vatican Synod, he has the following: "Therefore, nothing at all matters... otherwise He Himself were not the Author of all Sacred Scripture."

Although these words of Our predecessors leave no place for ambiguity or evasion, We must grieve, Venerable Brothers, that not only were there not lacking some among those outside the Church, but even among the sons of the Catholic Church, moreover – which wounds Our soul more severely – among the clergy itself and the teachers of the sacred disciplines, who relying proudly on their own judgment, either openly reject the magisterium of the Church on this subject or secretly oppose it. Indeed, We approve the plan of those who, to extricate themselves and others from the difficulties of the Sacred Codex,

in order to eliminate these difficulties, rely on all the aids of scholarship and literary criticism, and investigate new avenues and methods of research; but they will wander pitifully from their purpose, if they disregard the precepts of Our predecessor and pass beyond certain limits and bounds which the Fathers have set [Prov. 22:28]. Yet by these precepts and limits the opinion of the more recent critics is not restrained, who, after introducing a distinction between the primary or religious element of Scripture, and the secondary or profane, wish, indeed, that inspiration itself pertain to all the ideas, rather even to the individual words of the Bible, but that its effects and especially immunity from error and absolute truth be contracted and narrowed down to the primary or religious element. For their belief is that that only which concerns religion is intended and is taught by God in the Scriptures; but that the rest, which pertains to the profane disciplines and serves revealed doctrine as a kind of external cloak of divine truth, is only permitted and is left to the feebleness of the writer. It is not surprising, then, if in physical, historical, and other similar affairs a great many things occur in the Bible, which cannot at all be reconciled with the progress of the fine arts of this age. **There are those who contend that these fabrications of opinions are not in opposition to the prescriptions of Our predecessor, since he declared that the sacred writer in matters of nature speaks according to external appearance, surely fallacious. But how rashly, how falsely this is affirmed, is plainly evident from the very words of the Pontiff.**

And no less do they dissent from the doctrine of the Church who think that the historical parts of Scriptures depend not on the absolute truth of facts, but only on what they call the relative and harmonious opinion of the multitude; and they do not hesitate to infer this from the very words of Pope Leo, because he said that the principles established regarding the things of nature can be transferred to the historical disciplines. And so they contend that the sacred writers, just as in physical matters they spoke according to what was apparent, so they related events unwittingly, inasmuch as these seemed to be established according to the common opinion of the multitude or the false testimonies of others; and that they did not indicate the sources of their knowledge, and did not make the narrations of others their own. Why shall we refute at length a matter plainly injurious to Our predecessor, and false and full of error? For

what is the similarity of the things of nature and history, when the physical are concerned with what “appears to the senses,” and so should agree with phenomena; while on the other hand the law of history is chiefly this, that what is written must be in agreement with the things accomplished, according as they were accomplished in fact? If the opinion of these men is once accepted, how will that truth of sacred story stand safe, immune from every falsehood, which Our predecessor declares must be retained in the entire text of its literature? But if he affirms that the same principles that have a place in physics can to advantage be transferred to history and related disciplines, he certainly does not establish this on a universal basis, but is only professing that we use the same methods to refute the fallacies of adversaries as we use to protect the historical faith of Sacred Scripture against their attacks....

Nor is Sacred Scripture lacking other detractors; We recognize those who, if they are restrained within certain limits, so abuse right principles indeed that they cause the foundations of the truth of the Bible to totter, and undermine the Catholic doctrine handed down by the Fathers in common. Among these Fathers Jerome, if he were still alive, would surely hurl the sharpest weapons of his speech, because, neglecting the sense and judgment of the Church, they very smoothly take refuge in citations which they call implicit, or in accounts historical in appearance; or, they contend that certain kinds of literature are found in the sacred books, with which the whole and perfect truth of the divine word cannot be reconciled; or, they have such an opinion on the origin of the Bible that its authority collapses and utterly perishes...³⁵⁸

Are the 1616-1664 Papal Decrees Infallible?

Ultimately, the question of the canonical status of the decrees against heliocentrism rests solely with the magisterium of the Catholic Church, and heretofore she has not made any formal and official declaration that the 1616-1664 decrees were infallible. The closest the Church has come to remarking on the status of the decrees is the comment made by John Paul II in his 1992 speech stating: “Cardinal Poupard has also reminded us that the sentence of 1633 was not irreformable.” The reference to “irreformable” is another way of saying that the decrees were not infallible, since doctrines that are infallible, even in the words chosen to declare the doctrine, cannot be reformed at any time by any person. They

are sealed until the end of time. If by his repeating of Cardinal Poupard's opinion John Paul II was affirming that the 1633 decrees were, in fact, reformable, then this stands as the most public statement on their status. However, the fact that John Paul II's 1992 address to the Pontifical Academy of Science is not considered a formal declaration of Church doctrine, both the address and what it contains cannot be considered the official or definitive word on the issue.

Still, although it may be canonically proper to say that the 1633 decree against heliocentrism as being "formally heretical" was not technically infallible, it is quite a different matter to claim that the 1633 decree was, in actuality, erroneous, as many Catholics have done who have been influenced by the atheistic sectors of modern science. Fr. William Roberts, one of the leading critics of the Catholic Church's handling of the aftermath of the Galileo affair, has the following words to say about the faulty logic that is often employed by Catholic apologists who seek to exonerate the Church from any inconsistency. He writes:

When the doctrine of the Immaculate Conception was defined, all the conditions of an *ex cathedra* Act were so abundantly and clearly fulfilled that no Roman Catholic theologian would be permitted to raise doubt on the subject. I do not for a moment pretend that heliocentrism was condemned by any judgment of which the same may be said; neither have I attempted to prove that it was. My contention was a very different one; and I will try to explain and vindicate it.

I have found it laid down by such distinguished representatives of the Ultramontane school...that Congregational decrees, confirmed by the Pope and published by his express order, emanate from the Pontiff in his capacity of Head of the Church, and are *ex cathedra* in such sense as to make it infallibly certain that doctrines so propounded as true, are true."³⁵⁹

Roberts then adds many more examples of such instances in recent Catholic history. As his convincing repertoire of incidents closes, no Catholic apologist can remain cavalier about the decrees of 1616-1664. The solemnity of those decrees, Roberts reminds us, even if not technically infallible, are still an open wound on the veracity of the Catholic Church if, indeed, the Catholic apologist believes heliocentrism is a scientific fact and the popes who condemned it were wrong.

A word of caution is due at this point, however. Although Roberts, being an Anglican and an avowed heliocentrist, has as his main purpose for pointing out these ecclesiastical anomalies the undermining of the

Catholic Church, that is not our purpose here, of course. Roberts will go on to insist that since there is no real difference between “infallibility” and “not being in error,” then the 1616-1664 decrees were, for all intents and purposes, “infallible,” and thus the Catholic Church is exposed as a bogus institution for having deemed infallible a cosmological theory (geocentrism) that the world now regards as erroneous. On the one hand, our position, obviously, is that Roberts’ view of cosmology is itself erroneous and therefore the Church did not err in condemning heliocentrism. On the other hand, Roberts’ analysis of the situation should give pause to faithful Catholics to consider that, even though a particular doctrine may not be couched in the technical formula of infallible language, it is, for all intents and purposes, infallible in the practical sense, since such decrees were understood to be true and abiding statements, binding on the Christian faithful.³⁶⁰ Papal decrees of this sort, especially when the action is not merely disciplinary but involves the determination on a matter of faith (stipulated in the 1633 decree against heliocentrism as: “that which has already been declared and defined to be contrary of the divine Scripture,” or as Bellarmine called it: *ex parte dicentis*), can never be erroneous regarding the very issue it condemned. It is generally safe to posit that God will not permit the pope to use his supreme authority to impose on the mind of the Christian faithful doctrines that are false. Surely we would not want to say that God ignores the pope and allows him to require, under pain of excommunication, the Christian faithful to assent to heretical, erroneous, or rash propositions of the faith, even *ex parte dicentis*, whether we deem those doctrines infallible or merely authoritative.

Until the Catholic Church and her apologists come to the stark realization that their attempts to save the doctrine of infallibility has inadvertently put them in a position of sullying, perhaps beyond repair, the canonically lesser but still authoritative and binding decrees of the popes, they will continue to be the object of criticism from those outside the Church (like Roberts) who wonder if, indeed, this is the honest and forthright institution established by Jesus Christ that it claims to be. In the mid-1800s a publication from the *Dublin Review* raised this very question in the midst of the debates occurring just prior to Pius IX’s 1870 declaration on papal infallibility. The author writes:

We have just seen that the Pope’s letter to an individual bishop, is often, in fact, a doctrinal instruction addressed to the whole Church. May it not similarly happen, that what is in form the doctrinal decree of a Congregation, is in fact a doctrinal decree promulgated by the Pope as universal teacher? We must maintain that under particular conditions this is the fact.³⁶¹

Along these lines of argumentation, it is a fact that Urban VIII promulgated: (a) the 1633 decision that heliocentrism was “formally heretical” and “erroneous in faith,” and (b) Galileo’s detailed abjuration admitting to the same, to all the Catholic leaders of Europe. Obviously, this was by no means a private affair. As Dorothy Stimson notes:

Pope Urban had no intention of concealing Galileo’s abjuration and sentence. Instead, he ordered copies of both to be sent to all inquisitors and papal nuncios that they might notify all their clergy and especially all the professors of mathematics and philosophy within their districts...³⁶²

Finocchiaro confirms this situation:

In the summer of 1633 all papal nuncios in Europe and all local inquisitors in Italy received from the Roman Inquisition copies of the sentence against Galileo and his abjuration, together with orders to publicize them. Such publicity was unprecedented in the annals of the Inquisition and never repeated. As a result, many manuscript copies of Galileo’s sentence and abjuration have survived in European archives. By contrast, no copies of the full text of the Inquisition’s sentence against Giordano Bruno survive, even though his crime...and his penalty...were much more serious.... From the replies of the nuncios and inquisitors, there is concrete evidence that the sentence circulated in the manner intended. Letters of reply have survived from the nuncios to Naples, Florence, Venice, Vienna, Paris, Brussels, Cologne, Vilnius, Lucerne and Madrid, and from the inquisitors of Florence, Padua, Bologna, Vicenza, Venice, Ceneda, Brescia, Ferrara, Aquileia, Perugia, Como, Pavia, Siena, Faenza, Milan Crema, Cremona, Reggio Emilia, Mantua, Gubbio, Pisa, Novara, Piacenza, and Tortona. The most common reply was a brief acknowledgment of receipt and a promise that the orders would be carried out. However, in this case the standard response was not sufficient for the Inquisition. It expected to be notified that the orders had in fact been carried out. Those who did not send such a follow-up letter were soon reprimanded and had to write back to Cardinal Barberini to explain the oversight of the delay....The quickest promulgation occurred in university circles.³⁶³

Finocchiaro adds:

We know today that such a promulgation of Galileo's condemnation had been decided at the Inquisition meeting of 16 June 1633, presided over by Pope Urban VIII; this was the same meeting at which Galileo's trial was discussed and the pope reached a decision on its conclusion, the verdict, and the penalty. Thus the promulgation was not an afterthought but part of a well-considered plan. In fact, the plan was reaffirmed at the meeting of June 30, when the pope was again presiding over the Inquisition meeting and was a little more explicit about its details. Cardinal [Antonio] Barberini's letter followed immediately thereafter.³⁶⁴

The letter from Antonio Barberini (brother to Pope Urban VIII) stated the following:

During this time, there were indications from popular philosophers and scientists that the Church had made its desired impression, which then prompted these academicians to seek some measure of safe haven by questioning the precise level of authority the magisterium's decree held. Immediately after Galileo's 1633 trial, René Descartes, who had already written the draft of a book which included his advocacy for heliocentrism, sent a letter to a friend in Paris, stating:

....But I will tell you that recently I made inquiries in Leiden and Amsterdam about whether Galileo's *System of the World* was available...I was told that indeed it had been printed, but that all copies had been simultaneously burned in Rome and he had been condemned to some penalty. This has shocked me so much that I have almost decided to burn all my papers, or at least not to let anyone see them. For I surmise that he, who is Italian and as I understand well liked by the pope, was convicted for no other reason than that he undoubtedly wanted to establish the earth's motion...and I confess that if it [heliocentrism] is false, so are also all the foundations of my philosophy; it is easily demonstrated from them, and it is so connected with all parts of my treatise that I would not know how to detach it without rendering the rest flawed. However, just as I would not want for anything in the world to produce an essay containing the least word that was disapproved by the Church, so I would rather suppress it than publish it maimed.³⁶⁵

In a second letter in February 1634, Descartes reiterates his resolve but wonders whether the decree is a binding article of faith:

....I have decided to entirely suppress the treatise I had written and lose almost all my work of four years in order to render full obedience to the Church, insofar as it has prohibited the opinion of the earth's motion. However, because I have not yet seen that either the pope or a Council has ratified this prohibition that was issued by the Congregation of Cardinals in charge of book censorship, I would be very pleased to learn what one thinks about it in France nowadays, and if their authority is sufficient to make it an article of faith.³⁶⁶

In a third letter, the same thinking persists. Although Descartes, independently of Galileo, believes he has demonstrated the movement of the Earth, his only recourse is to create a gap between the Sacred Congregation and a dogmatic Council:

Undoubtedly you know that a short time ago Galileo was reproved by the Inquisitors of the Faith and that his opinion on the earth's motion was condemned as heretical. Now, I will tell you that all things I explain in my treatise, including also this opinion of the earth's motion, depend so much on one another that it is sufficient to know that one of them is false to realize that all the reasons I employ have no force at all; and although I think they are based on demonstrations that are very certain and very evident, nevertheless I would not want for anything in the world to maintain them against the authority of the Church. I know well that one could say that nothing decided by the Inquisitors of Rome is thereby automatically rendered an article of faith, and that it is necessary that it first be approved by a Council.³⁶⁷

Hence, Descartes decides to forge a safe haven by recourse to an anachronistic lacuna between the Sacred Congregation and a hypothetical Council, leaving aside the fact that: (a) the pope was the supreme authority behind the condemnation of Galileo, and (b) that even if there were such a Council, its decision must be approved by the reigning pope, otherwise it is null and void, a situation that has occurred previously in Catholic history. Since from Pius V in 1616, to Urban VIII in 1633, to Alexander VII in 1664 and beyond, the pontiffs were in one accord on condemning any cosmology that required the Earth to move, no Council that affirmed heliocentrism would have been approved by the pope. The pope would

have had the final say on the outcome of a Council just as he had the final say on the outcome of his Sacred Congregation. As Catholic apologist, John Daly, notes:

...no single act of the Sacred Congregations took place without the fullest authorization of the then reigning popes who, in fact, supervised and directed every step of the entire procedure; moreover the pope is himself the *ex officio* prefect of the Holy Office; so just as all of the Sacred Congregations are in fact no more than the instruments through which the pope governs the Church by delegating certain of his powers, the Holy Office is that which has the least possibility of acting independently of the pope. Moreover it is certain that it was the pope who ordered the sentence of the Holy Office condemning Galileo on the 22nd of June 1633 to be promulgated and circulated throughout the Church, and in 1664 and 1665 it was unquestionably the pope acting *motu proprio* who promulgated anew the decrees condemning all works in favor of heliocentrism in the two editions of the Alexandrine Index of Forbidden Books.

No single detail in any of the official acts of the Holy See...can be construed as showing the slightest hesitation in rejecting heliocentrism as absolutely and unconditionally false owing to its conflict with Divine revelation as contained in the Bible. Nor is there any basis for pretending that the prohibition to defend heliocentrism was limited exclusively to Galileo. Certainly on the 25th of February 1616 he was forbidden in a special way to treat the subject. But on the 5th of March 1616 *all* writings in favor of heliocentrism were condemned, no matter by whom they were written, and the minutes of the proceedings of the Holy Office in 1633 show that the reason why the pope ordered wide circulation to be given to the decree condemning Galileo was in order that it might serve as an indication to others of the position of the Holy See on the subject and thereby prevent other writers from falling into the same aberrations as Galileo himself. And in 1664 and 1665 the prohibition became even more general, if possible, when Pope Alexander VII extended it specifically so as to include not only books but even periodical articles, manuscripts and other writings – whatever could be used to promote heliocentrism.³⁶⁸

As we can see, the condemnation of Galileo was no private affair. Every person with authority (nuncios, inquisitors, bishops, priests) and

academic influence (professors, mathematicians, scientists) knew of the decree and their unmitigated cooperation was demanded. As noted, there had never been such a thorough and systematic dissemination of a decision by a pope and his Sacred Congregation. As it stands, the 17th century magisterium's actions were unprecedented. From this evidence one could argue that such pervasive and regimented procedures were at least reasonably close to the criteria required for a binding and irreformable teaching.

Unfortunately, the question concerning the infallibility of a given doctrine of the Catholic Church has always been a minefield of debate and dissent. Debates over everything from whether the decree was disseminated to the universal church or if an Index qualifies as universal, to whether it was said *in forma specifica*, to whether the decree was directly as opposed to indirectly pronounced, to altering the definitions of "declare and define," to whether the pope can use any medium he wishes as long as he makes clear his intentions, continue to rage today. As good as the doctrine of infallibility is, nevertheless, because of its self-imposed restricted domain as to when it is applicable, it invariably creates a whole new set of problems, one chief problem being how we determine whether a specific Church teaching is infallible. Often the Church does not explicitly and unequivocally state that a given doctrine is infallible. Odd as it may seem, the words "infallible" or "irreformable" are not used in dogmatic proclamations. The four criteria for papal infallibility established in the decree of Pius IX in 1870 do not make it foolproof for the cleric or the layman to determine when, precisely, a given papal teaching is infallible, since the doctrine in question, ironically, is never preceded by the explicit words: "This teaching is an infallible and irreformable declaration of the Catholic Church for it fulfills all four criteria of the doctrine of papal infallibility." Adding to the debate, the 1983 Code of Canon Law states that if the Church does not explicitly declare a doctrine infallible, then it is not to be considered infallible.³⁶⁹ The whole process can easily become a quagmire of distinctions and counter-distinctions that turn that which was at first intended to be a simple help to the difficulties of life into tedious, hair-splitting legalese that sometimes confuses more than it clarifies.

At this point, advocates for infallibility will sometimes retreat from depending on *papal* infallibility and make an appeal to the *inherent* infallibility of the "ordinary magisterium" or the "constant teaching of the Church" as the authoritative basis for declaring these doctrines infallible. Although legitimate, this appeal, however, has its own set of problems, since it is open to the subjective judgment of clerics or laymen on a much lower level of authority than the pope, and thus, it invariably creates diverse opinions as to which specific traditional Church teachings are

infallible and which are not infallible. If it is not infallible, but merely authoritative, many feel that, although they could give “assent” to the teaching, they are not bound to obey it if, for the sake of conscience, they find it morally unacceptable.

At this point, their adversaries will appeal to other papal statements (Pius XII’s *Humani Generis*),³⁷⁰ the Code of Canon Law,³⁷¹ or conciliar statements (e.g., Vatican II’s *Lumen Gentium* 25) and insist that they are obligated to obey. For example, the latter document states:

“This loyal submission of the will and intellect must be given, in a special way, to the authentic teaching authority of the Roman Pontiff, even when he does not speak *ex cathedra* in such wise, indeed, that his supreme teaching authority be acknowledged with respect, and sincere assent be given to decisions made by him, conformably with his manifest mind and intention, which is made known principally either by the character of the documents in question, or by the frequency with which a certain doctrine is proposed, or by the manner in which the doctrine is formulated.”

But in respect of the Church’s geocentric teachings and its corollary condemnations of heliocentrism over the past two thousand years, *Lumen Gentium* 25 brings us back to square one, as it were, in authenticating the authority of the 1616-1664 decrees and the level of commitment and obedience Catholics must give to them. In effect, Cardinal Poupard’s and John Paul II’s appeal to the decrees against heliocentrism as not being “irreformable” becomes moot since, as is true with many teachings of the Catholic Church, the mere “ordinary” or “traditional” authority of the decrees plays a larger part, according to *Lumen Gentium* 25, in commanding submission from the Catholic parishioner. In fact, the Church’s historic teaching on geocentrism and her condemnation of heliocentrism fulfills all the criteria of *Lumen Gentium* 25:

- “that his supreme teaching authority be acknowledged with respect”:

It was certainly the case that popes Paul V, Urban VIII and Alexander VII understood themselves and their decrees against heliocentrism as coming from their “supreme teaching authority” and commanded that it be “acknowledged with respect.” Urban VIII, for example, approved his Holy Office’s conclusion that heliocentrism was “formally heretical” and “erroneous in faith,” and demanded that Galileo sign an abjuration to that effect. Obviously, Pope Urban VIII also considered his predecessor’s

Chapter 7: The 1820 Imprimatur and 1835 Index

decree, Paul V's, as authoritative, binding, and demanding respect, since the 1633 decree was based on the condemnations of the 1616 decree.

- “and sincere assent be given to decisions made by him”:

It was certainly the case that the decrees against Copernicanism required the “assent” of Galileo, Foscarini, and all the other theologians who were venturing into the area of biblical cosmology. Urban VIII sent letters of the decree against Copernicanism and Galileo's abjuration to all the papal nuncios and universities of Europe showing the seriousness of the issue and his desire to have it widely disseminated so that the Christian faithful would be obedient to it. Alexander VII devoted a signed papal bull to the subject of banning books that threaten the faith and welfare of the Christian faithful, including Galileo's, Copernicus' and Kepler's, stating: “We command each and every one of our venerable brethren, the patriarchs, archbishops, bishops and other Ordinaries of places, as well as those beloved sons who are their vicars and officials, the inquisitors of heretical depravity, the superiors of every kind of religious Order, congregation, society, or institute, and all others...” to obey his words.

- “conformably with his manifest mind and intention”:

Few can read the documents surrounding the Galileo affair and come away without the conviction that the popes, cardinals and the Holy Offices were as resolute in their condemnation of Copernicanism as they have been about most major doctrines of the Church. The popes used and approved very solemn and foreboding language and made sure that the decrees were enforced throughout Europe.

- “which is made known principally either by the character of the documents in question”

The decrees against heliocentrism were put in place for the express purpose of protecting Scripture from false interpretations and protecting the Christian faithful from harmful teachings. Although the decrees may not reach the level of being declared formally infallible, they are, nevertheless, on the same level of “ordinary” or “traditional” authority as most other doctrines that the Church has taught.

- “or by the frequency with which a certain doctrine is proposed”

The formal and official condemnations of Copernicanism spanned a period of fifty years (1615-1664) and were delineated by three different popes. The number of ecclesiastical documents and other personal

correspondences written about the Galileo affair over the course of three decades (1615-1633) exceed 7,000. Obviously the Church considered this a grave matter. She incessantly appealed to the 1500 years of tradition on the teaching of geocentrism as her greatest bulwark against the new ideas of Copernicus and Galileo.

- “or by the manner in which the doctrine is formulated”:

During the condemnations against heliocentrism the Church issued some of the most detailed and comprehensive decrees ever written. Every wrinkle of the issue was investigated, arguments were presented and rebutted, witnesses were put under oath, experts were called in for testimony, the most severe and condemnatory language was formulated in the final decree, that is, that heliocentrism was “formally heretical” and “erroneous in faith.” If geocentric doctrine does not qualify under the rubrics of *Lumen Gentium* 25, what does?

1870: Vatican I, the Ordinary Magisterium, and Modern Science

Vatican I also had some important things to say regarding the authority of the ordinary magisterium and the claims of modern science. They are as follows:

Vatican I: Further, by divine and Catholic faith, all those things must be believed which are contained in the written word of God and in tradition, and those which are proposed by the Church, either in a solemn pronouncement or in her ordinary and universal teaching power, to be believed as divinely revealed.³⁷²

In regard to “those things proposed by the Church,” Vatican I makes no distinction between a “solemn pronouncement” (an infallible, *ex cathedra*, definition) and the ordinary magisterium, insofar as it concerns the truth of a doctrine. Both sources are to be considered as “divinely revealed.” Hence, if the condemnations of heliocentrism, which were “declared and defined” as being “formally heretical” and “erroneous in faith” were not “solemn pronouncements,” it follows that they were then authoritative decisions from the “ordinary magisterium,” and are likewise to be understood as “divinely revealed.”

Vatican I: By enduring agreement the Catholic Church has held and holds that there is a twofold order of knowledge, distinct not only in principle but also in object: (1) in principle, indeed, because we know in one way by natural reason, in another by

divine faith; (2) in object, however, because, in addition to things to which natural reason can attain, mysteries hidden in God are proposed to us for belief which, had they not been divinely revealed, could not become known.³⁷³

In this case, the matter of geocentrism, which, on one level, the Church proposed as a “matter of faith,” it is a fact that modern science, especially the relativistic forms, admits that it cannot determine whether the Earth moves or is stationary. In effect, the immobility of the Earth is something that can only be revealed by “divine faith.”

Vatican I: But, although faith is above reason, nevertheless, between faith and reason no true dissension can ever exist, since the same God, who reveals mysteries and infuses faith, has bestowed on the human soul the light of reason; moreover, God cannot deny Himself, nor ever contradict truth with truth. But, a vain appearance of such a contradiction arises chiefly from this, that either the dogmas of faith have not been understood and interpreted according to the mind of the Church, or deceitful opinions are considered as the determinations of reason. Therefore, “every assertion contrary to the truth illuminated by faith, we define to be altogether false.”³⁷⁴

In regards to the issue of geocentrism, both of the above warnings come into play: (a) Cardinal Bellarmine informed Galileo that geocentrism was a “matter of faith” and that the Church, based on the consensus of the Fathers, could not interpret Scripture in opposition to the same literal interpretation that had been passed down to it through the preceding centuries. In essence, Galileo was accused of not interpreting Scripture “according to the mind of the Church”; (b) since false claims of scientific proof for heliocentrism were consistently being advanced (*e.g.*, Foscarini, Galileo, Kepler, Bradley, Settele, Boscovich, Newton, Bessell), and from which many people became convinced that heliocentrism was correct, these would have to be classed as “deceitful opinions [that] are considered as the determinations of reason.”

Vatican I: Further, the Church which, together with the apostolic duty of teaching, has received the command to guard the deposit of faith, has also, from divine Providence, the right and duty of proscribing “knowledge falsely so called” [1Tm 6:20], “lest anyone be cheated by philosophy and vain deceit” [Cl 2:8]. Wherefore, all faithful Christians not only are forbidden to defend opinions of this sort, which are known to be contrary

to the teaching of faith, especially if they have been condemned by the Church, as the legitimate conclusions of science, but they shall be altogether bound to hold them rather as errors, which present a false appearance of truth.³⁷⁵

Obviously, Galileo was “forbidden to defend opinions” of “knowledge falsely so called,” concerning the claims of science that asserted the Earth revolved around the sun.³⁷⁶ Galileo was reminded in 1633 that heliocentrism, as early as 1616, had already been “declared and defined as opposed to Scripture,” and was now declared to be “formally heretical” and “erroneous in faith” in 1633. Hence, the Church made it known that heliocentrism was, in the language of Vatican I, “known to be contrary to the teaching of faith,” since it had clearly “been condemned by the Church,” even though it was commonly believed to be a “legitimate conclusion of science.” These “legitimate conclusions,” the Church warned, could “present a false appearance of truth,” which is certainly the case for heliocentrism since geocentrism can be demonstrated to work just as well on geometric and dynamic bases. It is quite clear that the ordinary magisterium can, without invoking infallibility, declare these theoretical beliefs of science as propping up a “false appearance” and are thus “formally heretical” and “erroneous.” It is clear that this was done in 1616, 1633 and 1664, and these teachings against heliocentrism were never officially and formally rescinded or reformed.

Vatican I: And, not only can faith and reason never be at variance with one another, but they also bring mutual help to each other, since right reasoning demonstrates the basis of faith and, illumined by its light, perfects the knowledge of divine things, while faith frees and protects reason from errors and provides it with manifold knowledge. Wherefore, the Church is so far from objecting to the culture of the human arts and sciences, that it aids and promotes this cultivation in many ways. For, it is not ignorant of, nor does it despise the advantages flowing therefrom into human life; nay, it confesses that, just as they have come forth from "God, the Lord of knowledge" [1 Samuel 2:3], so, if rightly handled, they lead to God by the aid of His grace. And it (the Church) does not forbid disciplines of this kind, each in its own sphere, to use its own principles and its own method; but, although recognizing this freedom, it continually warns them not to fall into errors by opposition to divine doctrine, nor, having transgressed their own proper limits, to be busy with and to disturb those matters which belong to faith.³⁷⁷

If, for example, “right reasoning” was employed in 1887 when the Michelson-Morley experiment was preformed, it would have shown that a slight impedance of light’s velocity would be due to the rotation of space around a stationary Earth and not because matter shrank when it moved or that time slowed down. In that case “reason” would have worked very well with “faith.” But Einstein, being an atheist, had no faith. He ridiculed Christianity. Therefore, he would consider the rotation of space around a stationary Earth as “unthinkable,” and his colleague Edwin Hubble, a like-minded atheist, even though he saw through his telescope evidence that the Earth was in the center of the universe, rejected it as a “horrible” conclusion and something that must be “avoided at all costs.” Faith in Scripture could have provided the necessary boundaries for the crucial interpretations of the scientific experiments of the late 1800s and 1900s. Science would have been spared the wild goose chase it was forced to run as it began inventing a world in which twins age at different rates, clocks slow down at will, matter shrinks upon movement, where one is forced to say that up may be down and left may be right in order to have at least some answer to the crucial experiments. As Thomas Aquinas put it:

The knowledge proper to this science of theology comes through divine revelation and not through natural reason. Therefore, it has no concern to prove the principles of other sciences, but only to judge them. Whatever is found in other sciences contrary to any truth of this science of theology, must be condemned as false.³⁷⁸

John Daly adds:

It is perfectly true that the Church’s authority does not extend to the order of natural science and that therefore the Church cannot pronounce on whatever belongs exclusively to that order, or on anything insofar as it belongs to that order. The Church could not define the number of chemical elements, canonize the value of *pi* or forbid scientists to attempt to effect cold fusion, but she is entirely free to teach or legislate on any topic coming within her sacred field of competence even if that topic simultaneously belongs to the natural order.³⁷⁹

1965: Vatican Council II’s *Gaudium et spes*

As noted earlier, Vatican Council II did not address the Galileo issue directly; rather, it made some general comments about the relationship between science and religion, but with a slight twist. The comments were

limited to one paragraph of *Gaudium et spes*, which is miniscule compared to the volume of documents produced at Vatican II, especially in light of the burgeoning claims of science that had been forthcoming for the prior fifty years. Paragraph 36 of *Gaudium et spes* states:

Therefore if methodical investigation within every branch of learning is carried out in a genuinely scientific manner and in accord with moral norms, it never truly conflicts with faith, for earthly matters and the concerns of faith derive from the same God.(6)....

Consequently, we cannot but deplore certain habits of mind, which are sometimes found too among Christians, which do not sufficiently attend to the rightful independence of science and which, from the arguments and controversies they spark, lead many minds to conclude that faith and science are mutually opposed.(7)

We can see from a fair reading of the two sentences that no specific concessions are made to Galileo and no specific endorsements are given to heliocentrism. Although the “rightful independence of science” is acknowledged, this is not an independence that allows science to go outside the boundaries of the faith or say things that contradict the faith. In both sentences the message that shines through is that science and faith must work together and must never oppose one another. The reason, of course, is that they have God as both their author and designer.

The resolve of Vatican II not to give any direct concessions to Galileo was made clear when, as Fantoli describes it,

During the preparatory phase of the document the proposal was put forth for a frank recognition of the errors committed by the Church with respect to Galileo, and it became partially accepted by the “joint commission” which dedicated a new paragraph (No. 40) to the question of the autonomy of culture, where a brief mention was made of the error of the condemnation of Galileo.”³⁸⁰

This event, of course, never happened, since the proposed paragraph #40 contains no mention of Galileo and no error made by the Church. Monsignor Pietro Parente, co-president of the commission, saw to it that the reference to Galileo was eliminated, stating: “[It is] not appropriate to speak of it in this document – so as not to ask the Church to say: I have been wrong.”³⁸¹ Whatever Parente’s motivations were, even if it were to

save face for the Church that he personally thought had erred, is really of no consequence in the final tally, since, as those who understand Catholic protocol know, the Church is guided by the Holy Spirit into all truth. As such, it would have been erroneous to say that the Church made an error in her condemnation of Galileo and heliocentrism. If heliocentrism was correct, this was the perfect opportunity for the Holy Spirit, through the Church, to clear the air, as it were. The fact that it never happened shows once again that the efforts of the three popes of the 17th century to eliminate the “formally heretical” view of heliocentrism from Catholic doctrine still reverberate today, although in much more subtle tones.

Unfortunately, some of the more liberal sectors of Catholicism have been prone to eisegete these two sentences from *Gaudium et spes* to reach the agenda-driven conclusion that the Church has given science full reign to propose any theory it desires, and that the Church has little or no say in what is distilled from those theories. In actuality, *Gaudium et spes* not only refuses to acknowledge any error on the part of the Church in the Galileo affair, it says nothing different than what was previously stated in the Church’s tradition, for all the Church’s authorities, from Bellarmine, the Council of Trent, Pius IX to Leo XIII, taught that faith and science can never conflict. Indeed, that has been the whole theme of this book, since, if studied carefully and without the atheistic agenda common in the sciences today, modern science has demonstrated quite handily that the faith of our fathers who held fast to geocentrism was not in vain.

"No amount of experimentation can ever prove me right; a single experiment can prove me wrong."

Albert Einstein³⁸²

"I am really more of a philosopher than a physicist."

Albert Einstein³⁸³

"...by the reading of David Hume's and Ernst Mach's philosophical writings....It is very well possible that without these philosophical studies I would not have arrived at the special theory of relativity."

Albert Einstein³⁸⁴

"Concepts that have proved useful in ordering things can easily gain such a hold over us that we forget their mortal origin and accept them as unalterable facts....The path of scientific progress is often blocked for long periods by such errors."

Albert Einstein³⁸⁵

"I also fear for the soul of the scientific enterprise if we persist in ignoring the elephant in the room. Are we scientists able to follow the scientific method and admit we're wrong when the data say so? Or are we just middling priests of some Cold Dark Religion ushering in another millennium of epicycles"

Stacy McCaugh³⁸⁶

"I know that most men...can seldom accept even the simplest and most obvious truth if it be such as would oblige them to admit the falsity of conclusions which they have delighted in explaining to colleagues, which they have proudly taught to others, and which they have woven, thread by thread, into the fabric of their lives."

Leo Tolstoy³⁸⁷

"All knowledge is interpretation."

Karl Jaspers³⁸⁸

Chapter 8

John Paul II Reexamines the Galileo Case

Most Catholics today, including many in the Vatican hierarchy, have been unduly stigmatized by the Galileo affair. Since almost everyone has accepted as a *fait accompli* that the heliocentric system is the operating model of cosmology, almost every apologetic issued from either the Catholic hierarchy or its lay scholars in the last hundred years has, in one form or another, been for the sole purpose of finding some rationale why the Holy Spirit allowed previous popes and their heads of doctrine to condemn the heliocentric system. But this type of apologetic has problems from the start. To be Catholic has always meant that what was decreed in the past remains decreed in the present. The Catholic accepts that those who issued our historic decrees did so under the guidance of the Holy Spirit. Unless, per chance, an equally authoritative decree overturned a previous one, it has been commonly understood that a Catholic was bound to give his full allegiance. Hence the dilemma for the contemporary Catholic apologist is: (a) if the Holy Spirit was guiding the Church in the Galileo affair, and (b) if the Earth revolves around the sun, then how could the Church have been led to make such a tremendous and embarrassing blunder? Catholic apologists have agonized over this question for centuries. Unfortunately, almost all of them have tried to answer the dilemma by denying (a) and accepting (b). We have learned thus far in our treatise that the real truth is actually the reverse: the Holy Spirit was guiding the Church and heliocentrism is false.

Nevertheless, under the strain of appearing entrenched in an archaic medieval mentality and obtuse to the modern world, it was only a matter of time before the Catholic Church would readdress the Galileo affair in hopes of reconciling what were presumed to be the facts of science with the Church's official declarations about the truths of Scripture. No pope had even uttered the word "Galileo" in a public speech since 1633. The first to break the taboo was Paul VI in a passing reference to Galileo (along with Michelangelo and Dante) in a June 10, 1965 speech at Pisa.

It is no less a surprise that the one pope to take up the mantel and fill this lacuna of history would be **John Paul II** (1920-2005), one of the most cosmopolitan popes in the history of the Catholic Church. If there was ever a man who had the desire of reconciling the world with the



Church it was Karol Wojtyla, who from his early years as a bishop of Poland sought peace and compromise between rivaling factions. The Galileo affair became the best chance of doing so and it was planned early in his pontificate (1979). For what it's worth, the pope's personal plane that escorted him across the world into more countries than any previous pope was dubbed, "The Galileo." In Kraców, Poland where he was a bishop, Karol Wojtyla was called "the Copernican Canon," which was rather fitting since Copernicus came from Poland.

The challenge before him, of course, was no easy one. Since John Paul II, by most counts, was personally convinced that both heliocentrism and evolution were about as close to scientific truth as science could offer, he had the unenviable task of explaining why his predecessors, if they were guided by the Holy Spirit as he believed all popes in matters of doctrine were guided, could be so wrong on such a basic truth of Holy Scripture. Of course, since we must be realistic, few could expect that the purpose behind John Paul II's attempted reconciliation would include the possibility that the 17th century were right and Galileo was wrong. That the pope and the members of the commission that investigated the issue went into it with the same preconceptions as the previous popes and cardinals had made a reasonable assumption. One might say that the commission was biased from the beginning. Consequently, the commission

Pope admits church wronged Galileo 300 years ago
Scanned on 25/9/89
 Reuter in Pisa

THE Pope said yesterday that the church wronged Galileo when he was con-

to him as "the very great Galileo Galilei".

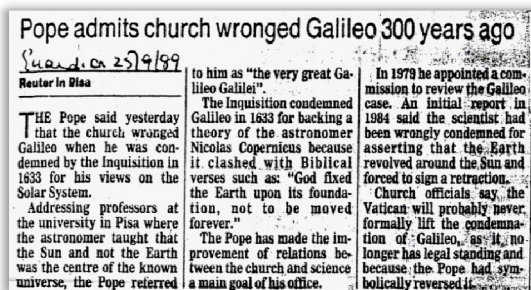
The Inquisition condemned Galileo in 1633 for backing a theory of the astronomer Nicolaus Copernicus because

In 1979 he appointed a commission to review the Galileo case. An initial report in 1984 said the scientist had been wrongly condemned for asserting that the Earth

responsibility to tell the world why the popes of yesteryear were mistaken, yet, perhaps, without explicitly admitting so.

John Paul II revealed his commission's findings in a speech to the Pontifical Academy of Science (PAS) in October

of 1992.³⁸⁹ As we will see, there seems to have been a larger hand at work which limited what would be said in the pope's speech, since what at first was expected to be a clear disavowal of the declarations of previous popes



on the Earth's immobility actually turned out to be an open-ended treatise that, perhaps unbeknownst to its commission authors, gave some amount of sanctity to the decisions against Galileo. As one author put it: "...when the commission was finally wound up in 1992, its achievements fell short of what had been expected from it."³⁹⁰

That a questionable result could occur as it did is quite intriguing considering the initial impetus that formed the papal commission. On November 10, 1979, John Paul II gave a speech on the centenary of Einstein's birth and he stated: "Galileo had much to suffer...at the hand of individuals and institutions within the Church."³⁹¹ A fair question to ask is, what "individuals" could be in view other than Cardinal Robert Bellarmine and Pope Paul V who in 1616 took the lead in thwarting Galileo; as well as Pope Urban VIII in 1633 who sentenced Galileo for saying things that were "vehemently suspect of heresy" and "opposed to Scripture"? What "institutions" could be in view other than the Inquisition and the *Index of Forbidden Books*? This was the speech in which the pope expressed the desire to have an intense study of the Galileo case, after which Cardinal Casaroli, the Secretary of State, organized the commission known as the *Studi Galileiani* in 1981. But when the address to the Pontifical Academy of Science was finally aired eleven years later in 1992, there was no indictment of "individuals and institutions within the Church" but only what was politely categorized as a "mutual incomprehension" between Galileo and "the theologians of the day." Five times in the speech, nameless "theologians" are blamed for misleading the Church against Galileo, perhaps because such unofficial operatives are conveniently expendable.

There is also no mention in the speech that the Earth moves, the main point of contention between Galileo and the Church. In other words, if the listener to the 1992 speech was waiting to hear a formal disavowal of the decisions made by Bellarmine, Paul V and Urban VIII, it was not there. What remained in the speech was much less than what may have been originally intended. Overall, the speech itself has enough ambiguities and theological and scientific loopholes within its short 3000-word content that either party, the pro-Galilean or the anti-Galilean, could extract support for their view.³⁹² The same type of non-committal remarks seem evident in the pope's September 22, 1989 speech at Pisa in which a Reuter's reporter described one "Church official" as interpreting the pope to have only "symbolically reversed" the decrees against Galileo.³⁹³

General Analysis of John Paul II's 1992 Speech on Galileo

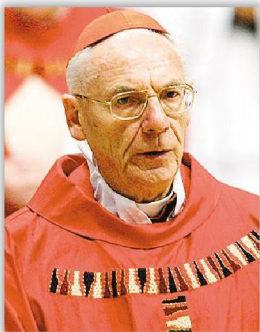
After receiving the commission's results in 1990, as noted, the pope gave the short speech to the Pontifical Academy of Science in October

1992. With little surprise, the world's newspapers invariably interpreted whatever the pope said as a complete and utter concession to Galileo. The *Los Angeles Times* headline read: "Earth Moves for Vatican in Galileo Case – Vatican Admits Error in 17th Century Case." The *Washington Post* chimed: "Vatican Says Galileo Right After All – Three Centuries Later, Pope Admits Error." The opening paragraph of the *Arlington Catholic Herald* followed suit: "Pope John Paul II formally acknowledged that the church erred when it condemned 17th century astronomer Galileo Galilei for maintaining that the earth revolved around the sun."

Suffice it to say, the reality is somewhat different. As it stands, the 1992 speech was a private affair between the pope and the Academy, but it goes without saying that the larger audience, even if uninvited, was the rest of the world, for surely all were waiting to hear the pope's personal verdict on one of the most famous and controversial cases in ecclesiastical history.

If there is any official level to the pope's speech, the Vatican has not specified what it is. For the time being it is probably best to call it the Church's most recent prudential assesement on the Galileo affair, pending a more definitive judgment in the future. What we know for certain, however, is that the 1992 speech is the Church's most involved and most public dealing with the Galileo affair in close to two centuries.³⁹⁴

Although the Vatican has not specified that this papal speech carries any particular ecclesiastical authority, the mere fact that it came from the pope who represents both the authority of the Church and his papal predecessors, means that the speech carries its own practical and pastoral weight, for a pope must be very judicious about the things he says, even if they are not definitively expressed, for the masses invariably interpret them as the voice of the Church. In addition, even though the pope himself may not have been the actual author of the speech, nevertheless, he must necessarily take responsibility for his own spoken words, for it is to him, not his underlings, that we look for the Church's position.³⁹⁵



If the speech was prepared for the pope, it would be well to scrutinize it in light of who was the most influential person on the papal commission of authors. In this case, the pope indicates that **Cardinal Paul Poupard** bears most of the responsibility for the historical and scientific information contained in the speech, since the pope stated clearly: "I would like to express my sincere gratitude to Cardinal Poupard, who was entrusted with coordinating the Commission's research in its concluding phase."³⁹⁶ This may have been one of the reasons that the speech was originally written in French, since Cardinal Poupard is not only

French, but when the commission was formed he was the auxiliary bishop of Paris and the president of the *Institut Catholique* in Paris.³⁹⁷

By Poupard's own admission, he went into the investigation believing that Galileo was right and the Church was wrong. In 1992 he stated:

The philosophical and theological qualifications, abusively attributed to the new theories regarding the centrality of the sun and the mobility of the earth, were the consequence of a period of transition in the realm of the knowledge of astronomy, and an exegetical confusion regarding cosmology....We need to recognize there errors as Your Holiness asked.³⁹⁸

As such, if there are some errors of fact in the papal speech, it is Cardinal Poupard who shares the brunt of the responsibility. As we will see, there are, indeed, quite a few such factual errors, as well as an equal number of erroneous conclusions from those errors. Still, some hold that "neither the final report nor the papal discourse appear to reflect the majority of the conclusions which are enunciated in the official publications of the Commission," which again suggests that the commission originally intended to be much more lenient on Galileo and much harder on the Church than what the papal speech turned out to be.³⁹⁹

A Logical and Inevitable Warning to the Church

Before we analyze the pope's speech, we need to reiterate one important point. If an individual is predisposed to believe that the heliocentric model is correct and that the popes and cardinals of the 1600s were in error in condemning Galileo, this stance not only creates an unbearable tension between the popes of today and the popes of the past, but it also, ironically, calls into question the ability of present popes and cardinals to judge the issue correctly, or to judge any issue correctly, barring a clear declaration of infallibility. The average man in the street sees this logic quite clearly. For example, the article in the *Challenge* newspapers ("Pope Calls For Reexamination Of Galileo Case In Important Speech On Science") mentions this conundrum for the pope in its opening statement:

Pope John Paul II has done nothing less than call into question the decisions of his predecessors on the case of Galileo. Many will argue that if his predecessors could be wrong on such an important matter as the relationship between Catholic teaching and science, what guarantee is there that Pope John Paul II

Chapter 8: John Paul II Reexamines the Galileo Case

himself is not wrong in what he teaches about human rights and other matters?⁴⁰⁰

The argument of the *Challenge* reporter is quite logical. Once it is posited that the former theologians of the Catholic Church made a pastoral error by refusing to listen to science and insisted, rather, on a literal interpretation of Scripture, this assessment, by force of logic, leaves today's theologians of the Catholic Church open to an equal but opposite error. That is, they themselves may be refusing to listen to the scientific evidence against their view, and, consequently, they may be giving the

wrong pastoral advice to their flock by erroneously promoting a non-literal interpretation of Scripture. This is the inevitable trap into which Church officials fall when they question or reject previous high-level decisions in the ecclesiastical tradition. In short, no one can deny this simple logic: if those of the past can err, then those of the present can err. To be more specific, if the popes of the seventeenth century who approved the condemnations against heliocentrism could err, then so can current popes who approve the reigning opinions of modern science for heliocentrism or acentrism. Ironically, the modern Church is 'hoist by



its own petard,⁴⁰¹ for if the Holy Spirit, who does not lie, was not guiding the aforementioned popes and their Sacred Congregations during the inquisition of Galileo on an issue of such great pastoral importance, how can we be sure the Holy Spirit is guiding the present pastors of the Church? In fact, we are left with an even more haunting question: if the Holy Spirit was not guiding the pastors of the past, then who was guiding them? The intractable nature of this problem is reinforced by the fact that, according to the modern Church, neither the seventeenth century papal sanction against Copernicanism, namely, that it was “formally heretical” “erroneous in faith” and “opposed to Scripture,” nor the twentieth century papal speech that “theologians did not recognize the formal distinction between Sacred Scripture and its interpretation,” are, to use Cardinal Poupard’s own word, “irreformable.”

As much as John Paul II, who, by common accounts personally believed in heliocentrism, desired to correct what he understood were the errors of the past, he inadvertently admits that he himself is subject to error

in judging the past. In a public but unofficial speech to journalists in May 1983, John Paul II stated:

To you who are preparing to commemorate the 350th anniversary of the publication of the great work of Galileo, *Dialogue Concerning the Two Chief World Systems*, I would like to say that the experience lived by the Church at the time of and following upon the Galileo case, has permitted a maturing and more concrete understanding of the authority which is proper of the Church. Thus is it understood more clearly that divine Revelation, of which the Church is guarantor and witness, does not involve as such any scientific theory of the universe and the assistance of the Holy Spirit does not in any way come to guarantee explanations which we might wish to maintain on the physical constitution of reality. That the Church was able to go ahead with difficulty in a field so complex, should neither surprise nor scandalize. The Church, founded by Christ who has declared himself to be the Way, the Truth, and the Life, remains nonetheless composed of limited human beings who are an integral part of their cultural epoch.⁴⁰²

Although, on the one hand, this statement could be understood as John Paul II's realization that divine revelation does not address issues such as whether nature operates on the basis of Quantum Mechanics, String Theory or Einsteinian Relativity, on the other hand, the implication is strong that John Paul is speaking about the Galileo affair and saying that the seventeenth century ecclesiastical authorities made their alleged mistakes because they were "limited human beings who [were] an integral part of their cultural epoch." Odd as it may seem coming from a pope of the Catholic Church, this statement appears to divest these clerical authorities of any guidance or protection from the Holy Spirit. It is as if in order to get the Church off the hook, as it were, John Paul II resorts to saying that God ignored the Church for an indefinite period of time, and which, unfortunately, resulted in the Church succumbing to the dark side of the "culture" of that day. Needless to say, it is a frightening scenario that John Paul visualizes here. Those who think deeply about the implications of what he is saying cannot honestly draw any long-term comfort from it. It inevitably makes every "reformable" teaching of the Church come under the black cloud of suspicion, including the "reformable" teachings of John Paul II himself.

In brief, the problems with John Paul II's assessment of the situation in his May 1983 speech are threefold. First, the "cultural epoch" of John Paul II is no more certain of the "physical constitution of reality" than the

cultural epoch from four centuries prior. For example, the three major scientific theories (Quantum Mechanics, String Theory and Einsteinian Relativity) contradict one another. Likewise, the Big Bang theory is riddled with problems, which are consistently covered over with fudge factors (inflation, dark matter, dark energy, *etc.*). We have also seen that Einsteinian Relativity (which is the basis for the Big Bang theory) has declared its native inability to tell us which of the two major celestial bodies, the sun and the Earth, revolves around the other, since both space and movement, by definition, are relative. At least the seventeenth century prelature had a conviction of which celestial body was revolving and which was not, and they based it on Scripture and Tradition.

Second, the “limited human beings” in the Church whom John Paul II says were responsible for these alleged miscues are, unfortunately, still with us in the Church today, regardless how much they seek to elevate themselves above their 17th century counterparts. Modern society, including the moral scandals and loss of faith that even John Paul II admitted were concurrent with his own pontificate, is certainly no closer to God than those who lived four centuries prior.⁴⁰³ As such, as much as Paul V and Urban VIII are considered “limited human beings,” so John Paul II cannot escape the same “limitation,” especially on the coattails of the confusing array of theories in modern science.

Third, in faulting the prelature of the past, John Paul II puts himself in the dubious position of having to choose the lesser of two evils to exonerate the Church at large. On the one hand, if it is accepted that his papal predecessors were wrong in condemning heliocentrism, then, although John Paul saves the modern Church on one count, he inevitably makes it a miserable failure on another count, for he now has the insurmountable problem of explaining how the Church of the past, which claimed to be guided by the Holy Spirit just as much as the Church of the present, could have been duped into thinking that true cosmology was even addressed by Scripture, much less erroneously concluding that the sun revolved around the Earth. No appeal to the “cultural epoch” is going to explain why all the Fathers, all the medievals, all the popes, all the saints, all the doctors, all the theologians and all the parishioners of the Catholic Church for almost the last two millennia could be led into such a stark and raving error regarding the application and interpretation of Scripture and the revolutions of the heavenly bodies until modern science (most of which is atheistic and totally confused itself as to how the universe operates, along with a Catholic Church since Vatican II that has certainly not exhibited the highest moral and doctrinal standards we have seen in previous ecclesiastical eras) came along to enlighten us to the indisputable and irreformable truth. That is the first of the two evils.

The second of the two evils is this: if John Paul's papal predecessors were right, it is obviously even more devastating for the Church at large, for: (a) John Paul II would be in error in stating that the previous Church was in error; (b) he would be in error in believing heliocentrism is true; (c) he would be in error in not discovering his two-fold error; (d) he would demonstrate that he, not the Church of the past, was not being guided by the Holy Spirit, at least in regard to personal opinions such as those he expressed in May 1983 and October 1992 to the world's scientists.

How Then Should the Church Proceed?

Well then, are we doomed to pick the lesser of two evils? The answer is no. Fortunately, there is a way out of this dilemma, and it will come, ironically, from none other than John Paul II as he gives the admonition in his 1992 speech to the Pontifical Academy of Science. He states:

It is a duty for theologians to keep themselves regularly informed of scientific advances in order to examine...whether or not there are reasons for taking them into account in their reflection or for introducing changes in their teaching.⁴⁰⁴

Keeping "regularly informed of scientific advances" so that theologians can "introduce changes in their teaching" is precisely what our book is encouraging modern theologians to do. The same direction was given by Cardinal Casaroli, the then Vatican Secretary of State, to the pope's Galileo commission on July 3, 1981. It stated at the outset that there should be neither an intention to overturn the decisions of the seventeenth century popes nor to craft a rehabilitation of Galileo. The marching orders were simply to "rethink" the Galileo affair. As Casaroli put it:

The aim of the various groups should be to rethink the whole Galileo question, with complete fidelity to historically documented facts and in conformity to the doctrine and culture of the time, and to recognize honestly, in the spirit of the Second Vatican Council and of the quoted speech of John Paul II, rights and wrongs from whatever side they come. This is not to be the review of a trial or a rehabilitation, but a serene and objectively founded reflection, in the context of today's historical-cultural epoch.⁴⁰⁵

Essentially, this means that Galileo affair is open; it has not ended. We thus await a final resolution. As we "rethink" the Galileo affair and

theologians begin to see that there is no scientific proof for heliocentrism and that geocentrism has much more scientific credibility than previously reported, they will, as John Paul II admonished them, have enough information to “introduce changes in their teaching” as they consider the facts of science in a whole new way, leading, hopefully, to a moratorium on apologizing for the popes and cardinals of the seventeenth century and, in turn, giving them the respect they are due as stewards of the Gospel who promoted the inerrancy of Holy Writ. Once an honest, studious and open-minded analysis is made of the scientific evidence, one will be able to see that the Holy Spirit was, indeed, behind the scenes guiding the Church of yesteryear to censor moving-Earth cosmology and, in turn, insist that we take Scripture’s propositions at face value. Without scientific proof for heliocentrism, today’s Church is under no obligation to entertain it as more than a curious hypothesis, and, consequently, she is neither under divine compulsion nor can she claim any justifiable reason to abandon the literal interpretation of Scripture. As St. Augustine once said:

But if they are able to establish their doctrine with proofs that cannot be denied, we must show that this statement of Scripture...is not opposed to the truth of their conclusions.⁴⁰⁶

Suffice it to say, modern science has never provided the world with “proofs that cannot be denied” to back up its steadfast devotion to heliocentrism. In that light, Pope Leo XIII made Augustine’s teaching concerning the interpretation of Scripture into Catholic doctrine, following the Tradition of the Church:

But he must not on that account consider that it is forbidden, when just cause exists, to push inquiry and exposition beyond what the Fathers have done; provided he carefully observes the rule so wisely laid down by St. Augustine – not to depart from the literal and obvious sense, except only where reason makes it untenable or necessity requires.⁴⁰⁷

What Pope Leo’s words mean is simply this: Without scientific proof for heliocentrism, there is no “reason” or “necessity” to “depart from the literal and obvious sense” of Scripture. As physicist Henri Poincaré understood it from the side of science: “We do not have and cannot have any means of discovering whether or not we are carried along in a uniform motion of translation.”⁴⁰⁸ Likewise, Einstein was thus forced to conclude:

Either coordinate system could be used with equal justification. The two sentences: “the sun is at rest and the Earth moves,” or

Chapter 8: John Paul II Reexamines the Galileo Case

“the sun moves and the Earth is at rest,” would simply mean two different conventions concerning two different coordinate systems.⁴⁰⁹

In an ironic sort of way, Einstein’s statement about the essential equality of differing “coordinate systems” is remarkably similar to what Cardinal Bellarmine told Fr. Foscarini when the latter insisted that the heliocentric system was correct. Being the astute intellectual he was, Bellarmine, like Einstein, easily saw how relativity and/or mathematics could save the appearances of either system. Bellarmine had taught astronomy in a number of Jesuit colleges.⁴¹⁰ He knew the arguments of celestial motion on both sides of the aisle. But, going beyond relativity, he also knew that, despite the geometrical equivalence, only one system could be the correct one. Thus, to Foscarini he writes:

First. I say that it seems to me that Your Reverence and Galileo did prudently to content yourself with speaking hypothetically, and not absolutely, as I have always believed that Copernicus spoke. For to say that, assuming the earth moves and the sun stands still, all the appearances are saved better than with eccentrics and epicycles, is to speak well; there is no danger in this, and it is sufficient for mathematicians. But to want to affirm that the sun really is fixed in the center of the heavens and only revolves around itself without traveling from east to west, and that the earth is situated in the third sphere and revolves with great speed around the sun, is a very dangerous thing, not only by irritating all the philosophers and scholastic theologians, but also by injuring our holy faith and rendering the Holy Scriptures false.

As we have shown, the evidence for why the Holy Spirit led our previous popes to condemn any model that required the Earth to move is so abundant that, in consideration of the fact that modern science has admitted both that it cannot prove heliocentrism and that geocentrism is not only a perfectly viable model but in many respects it is the more logical answer to the scientific data, it is the world that now owes an apology to the Catholic Church. In this light, Catholic scientist, author, and former professor of the Massachusetts Institute of Technology, Wolfgang Smith writes:

If there has been little debate in recent times on the subject of geocentrism, the reason is clear: almost everyone takes it for granted that the geocentrist claim is a dead issue, on a par, let us

say, with the flat-Earth hypothesis. To be sure, the ancient doctrine has yet a few devoted advocates in Europe and America, whose arguments are neither trivial nor uninformed; the problem is that hardly anyone else seems to care, hardly anyone is listening. Even the biblically oriented creation-science movement, which of late has gained a certain prestige and influence, has for the most part disavowed geocentrism. The fact remains, however, that geocentrist cosmology constitutes not only an ancient, but indeed a traditional doctrine; should we not presume that as such it enshrines a perennial truth? To maintain, moreover, that this truth has nothing to say on a cosmographic plane – that the doctrine, in other words, is “merely symbolic or allegorical” – to think thus is to join the tribe of theologians who are ever willing to “demythologize” at the latest behest of the scientific establishment. It will not be without interest, therefore, to investigate whether the geocentrist claim – yes, understood cosmographically! – had indeed been ruled out of court. I shall urge that it has not. As regards the Galileo controversy, I propose to show that Galilean heliocentrism has proved to be scientifically untenable, and that in fact the palm of victory belongs to the wise saintly Cardinal Bellarmine.⁴¹¹

Smith’s words are confirmed when we see the common rationale behind the thousands of histories written on the Galileo affair. All of the historians take for granted that heliocentrism has been scientifically proven. Thus they write their analyses of the historical events with that self-assured presumption as their foundation. Few, if any, have ever made a critical investigation of the purported scientific proofs for a moving Earth. Instead, they resign themselves to parrot the *status quo* of popular science. Their treatises are repetitious attempts to turn over every rock and look into every crevice of the historical situation hoping to find the silver bullet that reveals the “real” reason why the Church was so hard on Galileo,⁴¹² yet during the entire course of their research they are totally incapable of finding the real reason, for they have already dismissed the notion of a fixed Earth as a remote, if not a laughable assertion. Maurice Finocchiaro, one of the more respected Galileo historians, admits in the opening pages of his latest work that he is driven to uncover every detail of the Galileo affair because, as he says, “a key recurring question has been whether, how, and why the condemnation was right or wrong, and that is what the title *Retrying Galileo* is meant to convey.”⁴¹³ But Finocchiaro, although he makes no claims to knowing the science, pursues his unrelenting quest believing firmly that although...

Chapter 8: John Paul II Reexamines the Galileo Case

Galileo did not provide a valid scientific proof of the earth's motion...this demonstration was available in 1820 after a number of other discoveries: Newton's universal gravitation (1687), Bradley's stellar aberration (1729), Guglielmini's eastward deflection of falling bodies (1789-1792), and Calandrelli's annual stellar parallax (1806).⁴¹⁴

As Wolfgang Smith has noted above, however, anyone today who has made an honest investigation into the scientific merits of geocentrism; as well as uncovered the unproven assumptions of heliocentrism, will easily recognize that Finocchiaro's proposed "demonstrations" of a moving earth are totally baseless, yet (and we speak with no exaggeration in pointing out that) these alleged "demonstrations" are the foundation for everything Finocchiaro has written on the Galileo affair. Obviously, if the foundation of his critique is fallacious, then so are the conclusions he draws from them, and the same fault applies to every other author who is puzzled why the Church condemned heliocentrism.

Detailed Analysis of John Paul II's 1992 Speech

With these preliminary facts in the background, we will now proceed to analyze John Paul II's speech to the Pontifical Academy of Science. The following English translation of the pope's address, which was originally given in French, appeared in *L'Osservatore Romano* N. 44 (1264) on November 4, 1992. Key comments of the pope's speech have been underlined for emphasis.

Papal Speech: Secondly, the geocentric representation of the world was commonly admitted in the culture of the time as fully agreeing with the teaching of the Bible of which certain expressions, taken literally seemed to affirm geocentrism. The problem posed by theologians of that age was, therefore, that of the compatibility between heliocentrism and Scripture.

Here we have an admission from the pope that, if the Bible is taken literally, it affirms, or seems to affirm, geocentrism. It also acknowledges the basis upon which the popes and cardinals of the 1600s formed their argument against Galileo, that is, it was first and foremost "opposed to Scripture." It also means that, if one were to reject the teaching of geocentrism, he must necessarily reject the literal interpretation of Scripture. Although lessening the traditional strictures on literal interpretation may appear to be possible by simply shifting the principles of hermeneutics, it is not so easy when one considers that the hallmark of

Catholic biblical interpretation for the 1600 years prior to Galileo was a persistent and uncompromising literal interpretation of Scripture. This methodology gave the Church such crucial doctrines as Baptismal Regeneration, which, when reading the words of Jesus in John 3:5, “Unless a man is born of water and the Spirit he cannot enter the kingdom of heaven,” the Church interpreted them as only and distinctly applicable to the literal application and effect of water as the means by which salvation was procured. The Church did the same with the words of Jesus in Matthew 26:26, “This is my body,” which have been literally interpreted as being the actual, although veiled, body of Jesus Christ. Moreover, this staunchly literal interpretation of Scripture was produced in the face of not being able to explain regeneration or transubstantiation in a scientific way, and in the face of opposition from other sects, both then and now, insisting that we interpret Jesus’ words symbolically rather than literally. Surely, if the Lord can make his body present in the Eucharist, yet, as it were, “save the appearances” of the bread and wine, then he would have no trouble putting the Earth in the center of the universe and having the latter revolve around the former. In short, literal exegesis of Scripture is the undeniable legacy of Catholic biblical interpretation, and thus the burden of proof is certainly on the exegete (and the pope) who seeks to depart from it.

Papal Speech: Thus the new science, with its methods and the freedom of research which they implied, obliged theologians to examine their own criteria of scriptural interpretation. Most of them did not know how to do so.

It was not so much that they “did not know how to do so,” but that they simply did not feel compelled to do it. As even John Paul II noted in the above paragraph, there would be no good reason for them to change their interpretive methodology unless “irrefutable proof” for heliocentrism could be produced. Bellarmine, who took the lead in the exegetical issues of this case, plainly acknowledged in his remarks to Galileo that if such proof existed, he would not be censoring Galileo and he would not have adhered to a traditional and literal biblical hermeneutic. If there had been such proof, the Church would only need to say that when Scripture spoke about the sun moving around a stationary Earth this would be considered phenomenological language as opposed to literal language. But it is precisely this dramatic paradigm shift of biblical hermeneutics that the seventeenth century Church was not willing to initiate (since all of the Church’s previous doctrines were created by a literal interpretation of Scripture) unless forced to do so by irrefutable scientific proofs; proofs, we might add, that were not existent then and are not existent now.

Papal Speech: Paradoxically, Galileo, a sincere believer, showed himself to be more perceptive in this regard than the theologians who opposed him. “If Scripture cannot err,” he wrote to Benedetto Castelli, “certain of its interpreters and commentators can and do so in many ways.”⁽²⁾ We also know of his letter to Christine de Lorraine (1615) which is like a short treatise on biblical hermeneutics.⁽³⁾

As we saw in Chapter 4, whether Galileo was a “sincere believer” is certainly a debateable issue. As we have outlined earlier, Galileo’s personal life was certainly not the model of saintly living. The ill treatment of his mistress and children, along with his well-known pride and arrogance, are not the typical acts of a sincere Christian believer. Galileo may have been passionate about his science and his wish to make Scripture conform to it, but there is certainly room to doubt whether Galileo was a personally devout man of God. It is only in the latter stages of his life and, ironically, when he renounced Copernicanism a year before his death, do we find evidence that Galileo was humble and repentant of his former days. Interestingly enough, the pope’s commission, which had been working on the Galileo issue for at least nine years (1981-1990), makes absolutely no mention of Galileo’s eventual rejection of heliocentrism, even though it is common knowledge among reputable scholars who are familiar with Galileo’s life.

The remark that Galileo “showed himself more perceptive...than the theologians who opposed him” or that his letter to Christine is a “short treatise on biblical hermeneutics,” gives much more credit to Galileo than he is deserving, at the same time that it disregards the well-known Scriptural erudition of someone like Robert Cardinal Bellarmine. What evidence exists (other than the question-begging assertion that the “theologians” were wrong about geocentrism) that the prelature did not know how to “examine their own criteria for scriptural interpretation”? The theologians of the seventeenth century were well-trained exegetes, and this is the very reason they were able to stem the tide of the Protestant rebellion that was occurring about the same time. How could they be so astute against Protestant theology yet so obtuse against Galileo’s theology? Moreover, these Galileo theologians had the Council of Trent in their exegetical arsenal, and the Council was clear that no deviation from a patristic consensus was allowed in Catholic biblical interpretation. As the record shows, if there was ever a consensus of Fathers that believed firmly in one doctrine, it was the consensus on geocentrism. Conversely, Galileo had no formal training in biblical interpretation and hardly ventured into any noteworthy studies of Scripture, except when he was required to do so in an effort to support his heliocentric theory. One of the few examples we

have of Galileo exegeting a text of Scripture, Joshua 10:10-14, is quite elementary and fanciful.⁴¹⁵ The details of exegesis neither interested Galileo nor did he have any skill to accomplish such a task. Galileo always spoke in generalities about Scripture for it was the philosophical approach to interpretation that he wanted desperately to change in order to make room for heliocentrism. In fact, as we will see later, Galileo's appeal to Scripture was contradictory. On the one hand, he argued against the astronomical authority of Scripture and on the other hand he assumed Scripture's authority in order to develop Copernican interpretations of problematic passages.⁴¹⁶ Moreover, Galileo made no recourse to the Fathers or the medievals or the history of the popes and councils that went before him. Galileo was, in fact, demanding a total paradigm shift of biblical interpretation affecting all areas of faith and morals for the sake of one issue, an issue that neither he nor anyone else had proven or even could prove to anyone's satisfaction. Of course, if one thinks that modern science has proven indisputably that heliocentrism is true, he would certainly be predisposed to accept why the papal commission would conclude that Galileo was "more perceptive" than Bellarmine.

Papal Speech: 6. From this we can now draw our first conclusion. The birth of a new way of approaching the study of natural phenomena demands a clarification on the part of all disciplines of knowledge. It obliges them to define more clearly their own field, their approach, their methods, as well as the precise import of their conclusions. In other words, this new way requires each discipline to become more rigorously aware of its own nature.

The upset caused by the Copernican system thus demanded epistemological reflection on the biblical sciences, an effort which later would produce abundant fruit in modern exegetical works and which has found sanction and a new stimulus in the Dogmatic Constitution Dei Verbum of the Second Vatican Council.

Here we see one of the most significant yet most disturbing admissions from the modern prelatry about what the Galileo affair did to Catholic hermeneutics. Once geocentrism had been rejected because it was assumed that science had proven heliocentrism, the Bible would never be looked at the same again. If the Fathers of the Church, the medieval theologians, and the prelatry were wrong about interpreting the Bible as providing literal and accurate truth concerning history and the cosmos, then this would forever set the stage for limiting the Bible's domain. This

“new way” is dictated by the fact that it is assumed the seventeenth century Church was wrong to insist the Bible could be taken at face value. It is a cataclysmic shift in thinking that is comparable to no other in the history of the Church. As we will see later, this is precisely why Bellarmine was so adamant against it.

The “new way” is followed by a “new stimulus” in biblical interpretation supposedly given by Vatican II’s document, *Dei Verbum*. As most biblical scholars know, *Dei Verbum* contains a very controversial phrase which many in the Catholic prelature and Catholic academia have taken as a license to assert that Scripture is inerrant only when it speaks about matters of salvation. Fr. Poupard, Fr. Coyne and the rest of the papal commission follow this new school of thought. Many seminaries, universities, secondary schools and new bible translations have adopted it since Vatican II closed its doors in 1965. The sentence in question is from paragraph 11 of *Dei Verbum* and reads as follows:

Since, therefore, all that the inspired authors, or sacred writers, affirm should be regarded as affirmed by the Holy Spirit, we must acknowledge that the books of Scripture, firmly, faithfully and without error, teach that truth which God, for the sake of our salvation, wished to see confided to the sacred Scriptures.⁴¹⁷

The simple phrase that modern biblical scholarship has seized upon in order to advance the idea that Scripture is inerrant only when it speaks on salvation is “for the sake of our salvation.” In effect, what would normally be interpreted as nothing more than an affirmation that God made all of Scripture inerrant so that we can have a sure foundation upon which we can attain salvation, has now been turned into an excuse for why Scripture is not inerrant when it speaks on history and science – a view of Scripture never before taught in the Catholic Church.

A good example of this neo-orthodox view of the Bible is in the works of the late Fr. Raymond Brown, editor of the *New Jerome Biblical Commentary*, who, until his death in 1998, was one of the most influential Catholic theologians in the world. He writes: “Scriptural teaching is truth without error to the extent that it conforms to the salvific purpose of God.”⁴¹⁸ In another work he writes:

In the last hundred years we have moved from an understanding wherein inspiration guaranteed that the Bible was totally inerrant to an understanding wherein inerrancy is limited to the Bible’s teaching of ‘that truth which God wanted put into the sacred writing for the sake of our salvation.’ In this long journey of thought the concept of inerrancy was not rejected but was

seriously modified to fit the evidence of biblical criticism which showed that the Bible was not inerrant in questions of science, of history, and even of time-conditioned religious beliefs.⁴¹⁹

Essentially, the degree of the Bible's inerrancy was made flexible in order to make room for heliocentrism. The modern exegete was now required to recognize the presence of error in Scripture, which then led him to separate the error-free salvific message from the error-filled historical/scientific message. This new hermeneutic was then applied to science. Fr. Raymond Brown, himself was a staunch evolutionist, attributed a significant amount of his *New Jerome Biblical Commentary* to the theory of evolution, basing his view on the supposition that, since the Bible was not inerrant when it spoke about cosmogony or cosmology, he had every right to espouse evolution. Secular scientists began to use the same rationale. Carl Sagan, the world's premier cosmologist until his death in 1996, speaks of the Church "censoring alternative views and threatening to torture" but then couples that in the next paragraphs with:

But if the Bible is not everywhere literally true, which parts are divinely inspired and which are merely infallible and human? As soon as we admit there are scriptural mistakes (or concessions to the ignorance of the times), then how can the Bible be an inerrant guide to ethics and morals?⁴²⁰

The Church has been very clear that *all* of Scripture is inerrant, whether it is speaking of salvation, history, the cosmos or any other propositional truth. Hence, there simply is no precedent for interpreting the phrase "for the sake of our salvation" as anything more than the reason the Bible, *in toto*, was made inerrant by the Holy Spirit, that is, so there would be no doubt about the veracity of the entire message of God who cannot lie. The footnotes of *Dei Verbum* 11 make this truth perfectly clear as it quotes from the same Fathers, theologians, popes and councils that Bellarmine and Urban VIII depended upon to condemn the cosmology of Galileo and uphold the total inerrancy of Holy Writ, but these footnotes are always ignored when the intent and meaning of *Dei Verbum* 11's authors is being argued.⁴²¹

Papal Speech: 7. The crisis that I have just recalled is not the only factor to have had repercussions on biblical interpretation. Here we are concerned with the second aspect of the problem, its pastoral dimension. By virtue of her own mission, the Church has the duty to be attentive to the pastoral consequences of her teaching. Before all else, let it be clear that this teaching must

correspond to the truth. But it is a question of knowing how to judge a new scientific datum when it seems to contradict the truths of faith. The pastoral judgment which the Copernican theory required was difficult to make, in so far as geocentrism seemed to be a part of scriptural teaching itself. It would have been necessary all at once to overcome habits of thought and to devise a way of teaching capable of enlightening the people of God. Let us say, in a general way, that the pastor ought to show a genuine boldness, avoiding the double trap of a hesitant attitude and of hasty judgment, both of which can cause considerable harm.

Here we see somewhat of an anachronistic treatment of the mentality of the seventeenth century prelature and its theologians. We can safely say that it was not “necessary to overcome habits of thought” simply because there was no proof of Galileo’s universe. As such, the best way for the Church of that day to “be attentive to the pastoral consequences of her teaching,” was to maintain her complete trust in the Bible so that the parishioners under them would do the same. If the prelature were to succumb to the theories of Galileo and subsequently teach the populace that Scripture was no longer to be trusted when it spoke on history or the cosmos, we can imagine what kind of confusion this would have caused, especially in the wake of such upheavals as the Protestant rebellion, the Renaissance and the beginnings of the Enlightenment that were occurring concurrently with the Galileo affair and its aftermath. This was one of the most tumultuous times in the history of the Church. The right pastoral choice would have been to adhere to the tradition of the Church which always held Scripture as the highest authority on all that it addressed, and which was subservient to no intellectual pursuit of man, especially one that had no proof for its conjectures.

Papal Speech: 8. Another crisis, similar to the one we are speaking of, can be mentioned here. In the last century and at the beginning of our own, advances in the historical sciences made it possible to acquire a new understanding of the Bible and of the biblical world. The rationalist context in which these data were most often presented seemed to make them dangerous to the Christian faith. Certain people, in their concern to defend the faith, thought it necessary to reject firmly based historical conclusions. That was a hasty and unhappy decision. The work of a pioneer like Fr Lagrange was able to make the necessary discernment on the basis of dependable criteria.

Although the speech does not specifically name its concern, its reference to the “advances of the historical sciences” and “firmly-based historical conclusions” is alluding to the modern invention of “historical biblical criticism,” such as the theory of Julius Wellhausen and his followers who theorized that the Old Testament, in particular the Pentateuch, was written by different authors at widely separated times. The Wellhausen theory holds that Genesis 2 is a much earlier account than Genesis 1, the latter written by an author in the “Priestly” ranks during the return of Israel from Babylonian captivity around 515 B.C. Of the two accounts, then, Genesis 2 is said to be the more “historical,” while Genesis 1 is made to be an effort by the Jews to make the God of Israel more powerful than the Babylonian god, Marduk, so that the Jews could be invigorated to believe that their God would restore their previous fortunes. In other words, today’s biblical scholars claim that Genesis 1 is a fabricated story. This so-called “historical criticism” is completely at odds with the traditional view that the Church held for the 1900 years prior, namely, that Moses wrote the Pentateuch and did so by providing us with historical accounts that were completely reliable and chronologically accurate, from the Creation, to the Fall, to the Tower of Babel, to the Flood and beyond. Although it is true that in 1918 Catholic exegete Fr. M. J. Lagrange separated the good from the bad in the Wellhausen and other “historical critical” theories, by the late 1940s and beyond many Catholic biblical scholars paid little attention to his warnings, accepting the Wellhausen theory and other like-minded theories with little reservation. Cardinal Poupard, for example, was well known for accommodating many of these liberal theories of biblical hermeneutics at his *Institut Catholique* in Paris.

Papal Speech: It is necessary to repeat here what I said above. It is a duty for theologians to keep themselves regularly informed of scientific advances in order to examine if such be necessary, whether or not there are reasons for taking them into account in their reflection or for introducing changes in their teaching.

We have already remarked on the impact this statement has on the discussion. Suffice it to say, if the theologians of today are required to “keep themselves regularly informed of scientific advances” in order to adjust their theological teachings, it would be well for them to delve into the merits of geocentric science, for as we have seen, the evidence for a central and immobile Earth is quite convincing. We should also remark that if “theologians” are to keep themselves regularly informed of scientific advances, then so are the popes and bishops of the Church, for it

is they who have the final authority over theologians as to what the Church officially teaches.

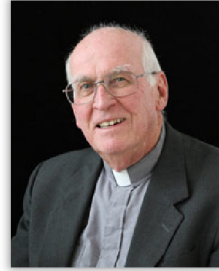
Papal Speech: 9. If contemporary culture is marked by a tendency to scientism, the cultural horizon of Galileo's age was uniform and carried the imprint of a particular philosophical formation. This unitary character of culture, which in itself is positive and desirable even in our own day, was one of the reasons for Galileo's condemnation. The majority of theologians did not recognize the formal distinction between Sacred Scripture and its interpretation, and this led them unduly to transpose into the realm of the doctrine of the faith a question which in fact pertained to scientific investigation.

That the Church of Galileo's day "carried the imprint of a particular philosophical formation" is actually not a detriment to its usefulness but its best asset. The Church was both Augustinian and Thomistic, the former leaning more toward Platonic philosophy and the latter more toward the Aristotelian, although there was much mixing depending on the subject matter. These thought paradigms helped the Church both universalize and particularize its doctrines and its outlook on the world. The fact is, those paradigms withstood the test of time. The only significant challenges to them came from the physical sciences, since there was a certain independence that scientific endeavor assumed by its very nature. But the Church's "philosophical formation" had already accommodated such challenges. As we noted previously, a thousand years earlier Augustine stated quite clearly that if science could provide irrefutable proofs for its claims, the Church would be more than willing to modify its interpretations of Scripture. Bellarmine posed the same thing to Galileo, and thus the "philosophical formation" was consistent. Moreover, literal interpretation of the Bible was the mainstay for 1600 years prior and it served the Church very well as the foundation for almost all of the Church's doctrinal and philosophical beliefs. Each doctrine came from the literal interpretation of a specific passage of Scripture.⁴²² It was only when science tried to call the Church's bluff, as it were, and falsely claimed to have proof of its cosmological theories, or perhaps thought that it had proof when it was only misinterpreting its own scientific evidence, that the climate began to change quite drastically.

In addition, the idea that a "majority of theologians did not recognize the formal distinction between Sacred Scripture and its interpretation" is a statement with little basis in fact. For such a serious indictment against the high churchmen of the 1600s we would expect at least some examples from the papal speech beside the question-begging assertion that their

consensual belief in heliocentrism serves as evidence to judge their papal predecessors. As even one of the members of the commission, **Fr. George Coyne**, admitted:

It is, furthermore, claimed in the Papal address that the error of the theologians was due to their failure to “recognize the distinction between Sacred Scripture and its interpretation.” This cannot be correct. Since the time of Augustine, this distinction was well established and it was taught in all the schools of exegesis at the time of Galileo. In fact, in 1616 the qualifiers/consultors of the Holy Office knew this distinction and made use of it in formulating their philosophical-theological opinion on Copernicanism.⁴²³



Since the 1992 papal speech fails to do so, it must also be pointed out that it was not merely “theologians” of the day who were teaching that the Earth’s immobility was part of the Scriptural revelation. It was mainly the popes and cardinals of the 1600s and 1700s. Bellarmine himself said: “Nor can one answer that this [geocentrism] is not a matter of faith.” Paul V assembled eleven cardinals who condemned the Copernicanism of Fr. Foscarini in 1615 as being “formally heretical,” and issued an injunction to Galileo never to teach heliocentrism again. Pope Urban VIII argued profusely with Galileo on the basis that heliocentrism was “opposed to Scripture” and finally decreed through his Holy Office that belief in the non-movement of the sun around the Earth was “formally heretical,” and by doing so made heliocentrism a belief that was against the faith.⁴²⁴ How could Urban VIII allow such a statement unless he believed that Copernicanism was an impossibility? Indeed, it was these very prelates who made the determination that Scripture had the final say on this particular issue of cosmology, not merely a pre-eminent say. As one can plainly see, this issue was not, by any stretch of the imagination, merely left to “theologians” to debate. Unfortunately, the 1992 papal speech treats these popes and cardinals almost as if they were uninvolved bystanders who were duped by “theologians” (theologians who are also unnamed), most of whom are categorized as those who knew very little about proper biblical exegesis. In fact, in the statement following, the 1992 papal speech attempts to exonerate “Robert Bellarmine” from the error of these “theologians,” but history shows that Bellarmine was Galileo’s most ardent opponent, basing his argument on the fact that Scripture had the final say. Quoting Fr. Coyne again:

The “theologians” in both discourses are unidentified and unidentifiable. There is no mention of the Congregation of the Holy Office, of the Roman Inquisition or of the Congregation of the Index, nor of an injunction given to Galileo in 1616 nor of the abjuration required of him in 1633 by official organs of the Church. Nor is mention made of Paul V or Urban VIII, the ones ultimately responsible for the activities of those official institutions.⁴²⁵

One can only assume that the 1992 speech’s lack of mention of the popes and cardinals of the Church was deliberate. Whatever the reasons, the fact remains that without the inclusion in the 1992 speech of a formal mention and formal disavowal of past authoritative decisions, nothing has changed, at least in the official sense. The most that can be said, perhaps, is that the Church is implying that it has given an unofficial toleration of heliocentrism without giving any official endorsement. In retrospect, we can see why Fr. Coyne and his colleagues, who are heliocentrists, are quite miffed by the papal speech and view it as a failure. Here, after more than ten years of study by a papal commission, the only concrete result is a short, non-authoritative speech addressed to a small body of scholars; a speech that contains no formal retractions or condemnations of any of the actions taken by the seventeenth century prelature against Galileo. All that the speech really does is attempt to give a rationale for why the two sides disagreed. Even then the speech has its own distortions and obfuscations, as we have seen thus far.

Papal Speech: In fact, as Cardinal Poupard has recalled, Robert Bellarmine, who had seen what was truly at stake in the debate personally felt that, in the face of possible scientific proofs that the earth orbited round the sun, one should “interpret with great circumspection” every biblical passage which seems to affirm that the earth is immobile and “say that we do not understand, rather than affirm that what has been demonstrated is false.”(4) Before Bellarmine, this same wisdom and same respect for the divine Word guided St Augustine when he wrote: “If it happens that the authority of Sacred Scripture is set in opposition to clear and certain reasoning, this must mean that the person who interprets Scripture does not understand it correctly. It is not the meaning of Scripture which is opposed to the truth but the meaning which he has wanted to give to it. That which is opposed to Scripture is not what is in Scripture but what he has placed there himself, believing that this is what Scripture meant.”(5) A century ago, Pope Leo XIII echoed this advice in

Chapter 8: John Paul II Reexamines the Galileo Case

his Encyclical Providentissimus Deus: “Truth cannot contradict truth and we may be sure that some mistake has been made either in the interpretation of the sacred words, or in the polemical discussion itself.”(6)

Fr. Coyne shows the flaws and inaccuracies in this paragraph of the 1992 speech in his following words:

Note that the epistemic priority is given here to Scripture. Since Galileo had no irrefutable proofs of Copernicanism, the current interpretation of Scripture by theologians, including Bellarmine, should remain, but always subject to reinterpretation. Is this a correct presentation of Bellarmine’s position?

The final report interprets Bellarmine as saying: “As long as there are no proofs for the movement of the Earth about the Sun, it is necessary to be cautious in interpreting Scripture.” What Bellarmine actually says is: “Should proofs be had, then we must go back and reinterpret Scripture.” The difference is: Bellarmine did not say: “Theologians should be cautious now in interpreting Scripture in expectation that proofs for Copernicanism might appear” but rather: “If a proof were to appear, then on that day in the future theologians would have to be cautious in interpreting Scripture.”

This interpretation of Bellarmine’s position, in both the final report and in the Papal address, is based on a partial and selective reading of the *Letter to Foscarini*. In the passage immediately preceding the one just cited, Bellarmine had taken a very restrictive position by stating that:

Nor can one answer that this [geocentrism] is not a matter of faith, since if it is not a matter of faith ‘as regards the topic,’ it is a matter of faith ‘as regards the speaker’; and so it would be heretical to say that Abraham did not have two children and Jacob twelve, as well as to say that Christ was not born of a virgin, because both are said by the Holy Spirit through the mouth of the prophets and the apostles.

Clearly if geocentrism is a matter of faith “as regards the speaker,” then openness to scientific results and circumspection in interpreting Scripture are simply ploys. They lead nowhere.

Furthermore, Bellarmine cites Scripture itself in the person of Solomon to show that proofs for Copernicanism are very unlikely. And still more, at the end of the *Letter to Foscarini* Bellarmine appears to exclude any possibility of a proof by stating that our senses clearly show us that the sun moves and that the earth stands still, just as someone on a ship “sees clearly” that it is the ship that is moving and not the shoreline. Both discourses [Poupard’s and the Pope’s] cite Bellarmine’s statement:⁴²⁶

I say that if there were a true demonstration [of Copernicanism] then one would have to proceed with great care in explaining the Scriptures that appear contrary and say rather that we do not understand them, rather than that what is demonstrated is false.

What they do not cite is the next sentence of Bellarmine: “But I will not believe that there is such a demonstration until it is shown to me.” From the concluding sentences of the letter it is clear that Bellarmine was convinced that there could be no such demonstration. A further indication of this conviction is that Bellarmine supported the Decree of the Congregation of the Index which was aimed at excluding any reconciliation of Copernicanism with Scripture....And why did he agree to deliver the injunction to Galileo in 1616? This injunction prohibited Galileo from pursuing his research as regards Copernicanism. Galileo was forbidden to seek precisely those scientific demonstrations which, according to Bellarmine,⁴²⁷ would have driven theologians back to reinterpret Scripture.

Papal Speech: Cardinal Poupard has also reminded us that the sentence of 1633 was not irreformable, and that the debate which had not ceased to evolve thereafter, was closed in 1820 with the imprimatur given to the work of Canon Settele.(7)

An imprimatur, which is on a much lesser level of authority than the sentence issued by Pope Urban VIII in 1633, cannot “close the debate.” This is especially true in light of the fact that Galileo’s, Copernicus’ and Kepler’s books were deliberately left on the *Index of Forbidden Books* after Settele was given his imprimatur in 1822. Technically, the matter can only be closed if a pope or council issues an infallible decree and declares that no more debate will be heard. For example, up until the Council of Trent in 1563, there were continuing debates concerning the canon of

Scripture. From Jerome, to Pope Gregory the Great, to Cardinal Cajetan, various doubts about the canon were voiced even though previous popes and councils had issued authoritative decrees (*e.g.*, Pope Damascene, Council of Florence). It was only at Trent that a formal infallible decree, accompanied with an admonition that all debate on the canon must cease, did the debate finally come to an end.

As to whether the decrees and sentences of 1616 and 1633 were “not irreformable,” Fr. Coyne makes another insightful remark:

So far as we can conclude from the circumstances of the condemnation, Pope Urban VIII and the cardinals of the Holy Office certainly did not themselves think it to be “reformable.” Furthermore, if it was reformable, why has the condemnation of 1633 or, for that matter, the Decree of the Congregation of the Index in 1616 never explicitly been “reformed?”⁴²⁸

Coyne’s logic is sound. It is one thing for Cardinal Poupard to claim that the 1616 and 1633 decisions were “not irreformable,” but the revealing of this pertinent fact of canon law actually turns out to be an admission from Poupard that the Catholic Church has never reformed the seventeenth century decisions. This is just another testimony to the divine protection that has been given to the Church’s teaching. Ernan McMullin, although personally endorsing Galileo and his cosmology, likewise admits:

And let there be no mistake, the judgment of the qualifiers in 1616 and the language of the decree supported by it *were* couched in definitive terms; it was not proposed as something “reformable,” to use a term favored by some recent theologians. The decree did not say that in the absence of a demonstration, maintaining the Copernican theses would be risky (“temerarious”). It described the theses as “contrary to Scripture,” period, just as the qualifiers had “qualified” the heliocentric claim as “formally heretical.”⁴²⁹

This is precisely why, as we will see later, that Bellarmine expected no proof for heliocentrism to arise in the future, and why the ecclesiastical argument against Galileo was never really based on whether proof existed. The Church depended on an *a priori* argument that could not be toppled. She drew her line in the sand long before scientific proof became part of the discussion. Galileo knew this to be the case when he said:

...for in disputes about natural phenomenon they seem to claim the right to force others by means of authority of Scripture to

Chapter 8: John Paul II Reexamines the Galileo Case

follow the opinion they think is most in accordance with its statements, and at the same time they believe they are not obliged to answer observations and reasons to the contrary.⁴³⁰

...to have such knowledge and demonstration. When one is in possession of this, since it too is a gift from God, one must apply it to the investigation of the true meanings of the Holy Writ as those places which seem to read differently.⁴³¹

But, of course, Galileo was not in “possession” of such “knowledge and demonstration.” At best his evidence was circumstantial; at worst it was a mere bluff from things he knew provided no proof, despite his claims that such items were a “gift of God.” There was really nothing else to say. Galileo’s claims were contrary to Scripture, case closed. Scripture was not going to change. The only thing that could change was Galileo, which he eventually did, forcefully in 1633 and voluntarily in 1641.⁴³² As McMullin notes:

The issue was primarily an exegetical one. Should the disputed passages be understood as being accommodated to the capacity of the hearers, as the defenders of Copernicus suggested? That this was the key question was clearly grasped in Rome well before the Copernican issue came before the Holy Office for formal decision.⁴³³

Canon Giuseppe Settele’s Imprimatur

As for the 1820 imprimatur to Settele, it certainly made no formal and official reform of the 1616, 1633, 1664 decrees, and it is obvious that the 1992 papal speech did not do so either. Indeed, instances in Church history in which a later pope formally and officially changed an authoritative decree and sentence given by a previous pope and his Holy Office would be extremely rare, and, may have never occurred in the history of the Church.

Even more significant is that little known facts concerning the 1820 procedure do not raise Settele’s imprimatur to any kind of definitive reform of the 1616-1633 decrees. Fr. Coyne explains why, and his analysis is most intriguing since it suggests that the Holy Office of 1820-22 was not being as forthright about this issue as it should have been:

The judgment rendered in the final report that “the sentence of 1633 was not irreformable” is accepted in the Papal address. In both discourses [Poupard’s and the Pope’s] there is an attempt to

establish that a reformation actually started as soon as the scientific evidence for Copernicanism began to appear. It is claimed that the reform was completed with the *imprimatur* granted under Pope Pius VII to the book of Canon Settele, *Elements of Optics and Astronomy* in 1822, in which Copernicanism was presented as a thesis and no longer as a mere hypothesis.⁴³⁴ There are a number of inaccuracies of historical fact and interpretation in these judgments.

The *imprimatur* of 1822 did not refer to Galileo or to the sentence of 1633. It referred to the teachings of Copernicanism. And if it is claimed that the *imprimatur* implicitly reformed the sentence of 1633, why was it not made explicit? As a matter of fact, the works of Copernicus and Galileo remained on the Index until 1835, more than a decade after the Settele affair. And since the sentence of 1633 refers explicitly to Galileo's failure to observe the decree of 1616, why was that decree not also reformed? Of course, if the tactical maneuver of the Commissary of the Holy Office, Olivieri, for granting the *imprimatur* to Settele's book were to be accepted, then the decree of 1616 and the sentence of 1633 would have been fully justified. At the recommendation of the cardinals of the Holy Office, in order to resolve the issue and to "safeguard the good name of the Holy See," Olivieri devised the following formula. Copernicus was not correct, since he observed circular orbits and epicycles. The Church was, therefore, justified on scientific grounds to condemn Copernicanism in 1616 and 1633. Obviously, there was no need to revoke a decree which rejected what was incorrect at the time of the decree! It appears, from the diaries of Settele, that Olivieri himself had some doubts about his argumentation. Considering all of these circumstances, the resolution of the Settele affair can hardly be considered a definitive reform of the sentence of 1633.⁴³⁵

Anibale Fantoli agrees with Coyne's assessment:

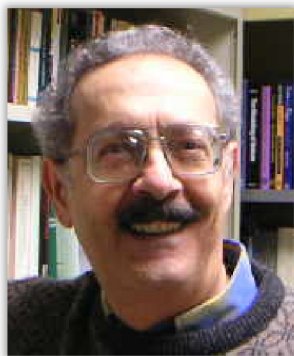
Father Grandi....Working in agreement with Olivieri...had tried to realize the objective of saving the good name of the Holy See, substantially by emphasizing the fact that the Copernican system, by then recognized even by Catholic



authors, had been purified from errors and inconsistencies which made it unacceptable in its original form. This was equivalent to maintaining that the Church had not erred in 1616 by putting on the *Index* a work at that time so defective at the level of physics and that now the Church was legitimately authorized to approve it after its errors were corrected.... That is, the Church had been right in condemning the latter from a scientific point of view, because Galileo had also upheld heliocentrism in its unsatisfactory Copernican form and, moreover, he had not been able to give convincing proofs of heliocentrism.⁴³⁶

Maurice Finocchiaro sees the same exaggerations and inconsistencies in Poupard's analysis of the situation. Commenting on Poupard's 1992 article in *L'Osservatore Romano* titled "Galileo Case Is Resolved,"⁴³⁷ Finocchiaro observes the following:

Poupard says that "in 1741, in the face of the optical proof of the fact that the earth revolves round the sun, Benedict XIV had the Holy Office grant an imprimatur to the first edition of the *Complete Works of Galileo*," however, the rationale underlying the imprimatur for Galileo's *Dialogue* was the plan to change its geokinetic language from categorical to hypothetical; hence this imprimatur was not, as Poupard goes on to say in the next paragraph, an "implicit reform of the 1633 sentence," but rather a kind of reaffirmation of it, "correcting" the *Dialogue* in the way that the Index's decree of 1620 "corrected" Copernicus's book. Poupard also says that "this implicit reform of the 1633 sentence became explicit in the decree of the Sacred Congregation of the Index that removed from the 1757 edition of the Catalogue of Forbidden Books works favoring the heliocentric theory," but we have seen that the 1757 decision was still implicit and indirect, so much so that Galileo's *Dialogue* was still left on the *Index* and Settele's *Astronomy* in 1820 could run into difficulties; moreover, the 1757 decision amounted to dropping the clause "all books teaching the earth's motion and sun's immobility" from the Index, and to describe this action as a "decree...that removed...works favoring the heliocentric theory" amounts to a sophistical use of



equivocation; for what was being removed was not the listed heliocentric works (which would imply removing Galileo's *Dialogue*, Copernicus's *Revolutions*, etc.), but rather the clause "all heliocentric works" (which in fact left those specific works in the Index). Referring to the Settele affair, Poupard asserts that "the unjustly censored author lodged an appeal with Pope Pius VII, from whom in 1822 he received a favorable opinion," and here Poupard's chronology is careless at best, for we have seen that the favorable decision on Settele's personal case came in 1820, although it was indeed in 1822 that the general Inquisition ruling came; however, the 1822 decision was not implemented until the 1835 Index and not in 1846, as Poupard misstates in the next paragraph.⁴³⁸

Whatever degree of historical revisionism Poupard is guilty of fostering, the facts reveal Maurizio Benedetto Olivieri certainly had a dilemma on his hands. The Dominican censor, Filippo Anfossi, refused Giuseppe Settele permission "to publish an explicitly Copernican textbook on the grounds that the decree of 1616 and the sentence of 1633 had never been revoked."⁴³⁹ Anfossi's reasoning hearkens back to what the head of the Congregation of the Index relayed to the French astronomer Joseph Lalande in 1765 when the latter sought to have Galileo's *Dialogo* taken off the Index. Lalande was told that because Galileo's condemnation came under the aegis of a canonical trial, the legal sentence against Galileo had to be revoked first before any consideration to reevaluating the *Dialogo* could be initiated.⁴⁴⁰ Consequently, Olivieri's mental machinations went to work. He had to come up with some rationale why the Holy Offices of 1616 and 1633 could appear to condemn something that ultimately turned out to be true, yet still avoid the accusation that they had erred in condemning it. He also had to figure out a way of allowing Settele's book pass as a "thesis" and not merely a hypothesis.⁴⁴¹

Perhaps Olivieri had a eureka moment when he found his solution, for it surely seemed ingenious. As he envisioned it, the 1616 Holy Office could easily have accomplished the task if it could be said that it declared *only the Copernican version* of heliocentrism erroneous, not the Keplerian version. Since by 1616 Kepler had already introduced elliptical orbits and dispensed with Copernicus' epicycles, Olivieri reasoned that the Holy Office could have condemned Copernicanism as technically erroneous yet still permit a correct form of it (*i.e.*, the form with elliptical orbits instead of epicycles). As Olivieri's rationalization played itself out, he reasoned that the 1820-22 Holy Office would have no need to revoke the decrees or sentence of the 1616/1633 Holy Offices because, technically speaking,

they were right in condemning Copernicus' defective model of heliocentrism.

Along these lines, the response from the Holy Office on September 11, 1822 has one very significant fact worthy of note. The decree states:

Their Eminences have decreed that, for the time being, now and in future, a license is not to be refused to the Masters of the Sacred Apostolic Palace for the printing and publication of works dealing with the mobility of the earth and the immobility of the sun according to the common opinion of modern astronomers, as long as there are no other contrary indications, on the basis of the decrees of the Sacred Congregation of the Index of 1757 and of this Supreme Holy Office of 1820.⁴⁴²

Here the Holy Office refers to the mobility of the Earth as the *communem modernorum astronomorum opinionem* ("the common opinion among modern astronomers"), which shows that the Church still regarded heliocentrism as a mere "opinion" regardless of whether said opinion was held by a majority of astronomers. Hence, it is of no real consequence that Settele's imprimatur would be issued based on whether it was a hypothesis or a thesis or somewhere between the two. "Opinions" are as commonplace as the people who hold them. Moreover, imprimaturs that are issued under false pretenses, as was obviously the case in Olivieri's efforts, certainly cannot catapult an opinion to a place of honor. The effort to bypass the 1616-1633 papal-approved decisions that a fixed sun and a moving Earth were "formally heretical" and "erroneous in faith" by claiming that it was only the *particular version* of heliocentrism that was being condemned is one of the most ludicrous and egregious forms of rationalization ever propounded by an ecclesiastical ward. In the final analysis, it does not matter whether the version of heliocentrism is Copernican, Neo-Copernican, Keplerian, Newtonian, *etc.* The 1616-1633 Holy Office's decisions stated that any cosmology that claims the sun is fixed or the Earth moves is formally heretical and erroneous in faith.

In regards to issuing imprimaturs under false pretenses, as noted earlier, Galileo was issued an imprimatur in 1631, under very questionable circumstances, for his book *Dialogue on the Two Great World Systems*. Before he received the imprimatur he failed to inform the censor that he was given an injunction in 1616 not to write or speak on the subject of heliocentrism. Effectively, this made Galileo's imprimatur null and void. Additionally, the subsequent condemnation of Galileo's book in 1633 by Pope Urban VIII shows that a censor may mistakenly issue an imprimatur assuming that a book contains no heretical teachings, but which, under closer scrutiny, is found not only to contain heresies but those of the

“formal” variety, since Urban, through his Holy Office, declared that heliocentrism was “formally heretical.”⁴⁴³

In the end, it is quite unsettling to see Olivieri and the cardinals who advised him project upon the Holy Office of 1616 such calculating motives in its condemnation of Copernicanism. Perhaps Olivieri’s desperate act is an indication of the intense pressure modern science had put on the Church during the 1800s. By this time, Kepler’s planetary ellipses and Newton’s theories of motion, at least in the way they were being interpreted by mainstream science, were making it very difficult for one to adhere to a geocentric universe. Moreover, the Renaissance, the Enlightenment and the Industrial Revolution were certainly no help in maintaining traditional Catholic beliefs. Additionally, in the aftermath of the 1789 French Revolution, Napoleon had deported Pius VI to Florence, abolished the papal government, and set up a Roman Republic, with his army keeping vigilance. He did the same to Pius VII, deporting him to France in 1810 and not freeing him until 1814. These events are very significant in the Galileo affair, since Napoleon expressed a keen interest in Galileo’s trial, which resulted in him confiscating all of the Vatican’s records and transporting them to Paris. The file on Galileo’s trial was not returned to the Vatican until 1843, eight years after his book was removed from the Index.⁴⁴⁴ Not coincidentally, it was under Pius VII’s reign that Olivieri found enough weak spots in the Church’s protocol to obtain an imprimatur for Settele’s book.

Fr. Coyne continues his intriguing commentary on this episode of the Galileo affair:

But antecedent to this purported definitive reform there are several intermediate reform movements which the final [Poupard] report addresses. Referring to the discoveries of aberration and parallax, it states that:

The facts were unavoidably clear, and they soon showed the relative character of the sentence passed in 1633. This sentence was not irreformable. In 1741...Benedict XIV had the Holy Office grant an imprimatur to the first edition of the complete works of Galileo.... This implicit reform of the 1633 sentence became explicit in the decree of the Sacred Congregation of the Index which removed from the 1757 edition of the Catalogue of Forbidden Books works favoring the heliocentric theory.⁴⁴⁵

To what extent were the activities of 1741 and 1757 reform decisions? The imprimatur of Benedict XIV was granted under the condition that the stipulations of the Padua Inquisitor, who

had requested the imprimatur, be observed. The result was that the publication in 1744 of the “complete works” had to exclude the *Letter to Christina* and the *Letter to Castelli*. Furthermore, the *Dialogue* had to be printed in Volume IV, accompanied by the 1633 sentence and the text of Galileo’s abjuration, and it had to contain a preface emphasizing its “hypothetical” character.

In 1757 after the Cardinal Prefect of the Congregation of the Index had spoken about the matter with Pope Benedict XIV, a decision was taken at a meeting of the consultors (not the Cardinal members) to omit the general prohibition of Copernican books in the new *Index of Forbidden Books*, to be published in 1758. What was to be admitted and prohibited? In the 1619 edition of the *Index of Forbidden Books*, the first after the 1616 decree, and in subsequent editions there were two categories of prohibitions of Copernican works: *nominatim* (specific works) and general. The edition of 1758 excluded only the general. Included still were among others: Copernicus’ *De Revolutionibus*, Galileo’s *Dialogue* and Kepler’s *Epitome*.⁴⁴⁶

Now we have reached the watershed and it appears as if Cardinal Poupard was either ignorant of these details; performed only a cursory review of the evidence; or he deliberately obfuscated the facts to make it appear as if the Church had fully condoned Copernicanism and rejected the decisions of the Holy Offices of 1616 and 1633. The gravity of this situation is noted in the fact that Poupard not only gave a speech with false or incomplete information to the Pontifical Academy of Science, he foisted the same distorted evidence upon the pope who then disseminated it to the world. It is Poupard who is responsible for the content since he handed the pope the following statement on October 31, 1992: “...the results of the interdisciplinary enquiry which you asked the Commission to undertake.”⁴⁴⁷ In reality, no pope of the eighteenth century had “reformed” the seventeenth century decisions. The 1741 and 1757 decisions carried almost identical prohibitions as that found in the last *Index of Prohibited Books* updated by Alexander VII in 1664. Moreover, the 1820 decision (giving an imprimatur to Canon Settele) was based on the duplicity of Olivieri, but even in that case, Galileo and Copernicus were kept on the *Index*.

The 1835 Index of Gregory XVI

This leaves the 1835 Index of Gregory XVI as the last official dealing with Copernicanism. As we noted previously, suspicious activity also

occurred during this time. Since the Church made it clear she would not consider removing Copernican cosmology off the *Index* until science could substantiate its case with “irrefutable” proof, lo and behold, a false proof, namely, stellar parallax, suddenly appeared (and hence the equally false claim that heliocentrism was a proven fact). Whether or not this had an influence on Gregory XVI to remove Copernicus’ and Galileo’s works from the *Index of Forbidden Books* in 1835 is not known, yet some suspect it to be so. Astrophysicist and historian, Owen Gingerich, explains:



But, Hooke [says]... “May not the Sun move as Ticho supposes, and that the Planets make their Revolutions about it whilst the Earth stands still, and by its magnetism attracts the Sun and so keeps him moving about it?”⁴⁴⁸ There is needed, Hooke declares, an *experimentum crucis* to decide between the Copernican and Tycho systems, and this he proposed to do with a careful measurement of the annual stellar parallax. I will not describe Hooke’s attempt, which used what might well be described as the first major instrumentation set up for a single purpose, but let me merely state that Hooke thought he had confirmed the effect and therefore the Copernican arrangement.

While it soon became apparent that Hooke’s handful of observations had not established a convincing annual parallax, further attempts led James Bradley to the discovery of stellar aberration, published in 1728.⁴⁴⁹ This phenomenon, easily explained in terms of a moving earth, did not have the historical cachet that the quest for parallax had. Hence, ironically, what persuaded the Catholic Church to take Copernicus’ book off the Index was an ultimately false claim for the discovery of an annual stellar parallax. The new edition of the Index appearing in 1835 finally omitted *De Revolutionibus*, three years before a convincing stellar parallax observation was at last published.⁴⁵⁰

From Gingerich’s source, *La Condammation des Livres Coperniciens et sa Révocation*, we have evidence that the decision to remove Copernicus and Galileo from the 1835 *Index* seems to have been made under false pretenses. In fact, we might say the pope made the removal under the duress of a scientific forgery – the claim that Bradley discovered stellar parallax almost a hundred years earlier, in 1728, and had already proven

the heliocentric system. Since there was no other reason for the Church to address the Copernican issue in 1835, it is more than coincidence that a bogus claim for stellar parallax was being propped up a century later as the missing cog in the cosmic wheel for the Church to cower to the demands of modern astronomy.

But the story is not over. Not only was the 1835 reprieve for Copernicus and Galileo presumptuous in light of the false claims attributed to stellar parallax, three years later (1838) when Friedrich Bessel published the first authenticated stellar parallax, the case for heliocentrism was still not proven, since, obfuscated in the clamor of the new parallax “discovery” was the unadmitted but undeniable fact that stellar parallax can never prove heliocentrism, since parallax can also be explained equally well from a geocentric model.⁴⁵¹ It is safe to conclude that if Gregory XVI had not been so influenced by false astronomical claims, the Church would have never seen fit to give either Copernicus or Galileo even a tiny pardon. Therefore, the removal from the *Index*, if it was based on presumptuous scientific claims, is invalid.

As it stands, the debate is far from “closed.” Perhaps the only thing closed is the minds of those who believe Galileo was right and the Church was wrong.

Papal Speech: 10. From the beginning of the Age of Enlightenment down to our own day, the Galileo case has been a sort of “myth,” in which the image fabricated out of the events was quite far removed from reality. In this perspective, the Galileo case was the symbol of the Church’s supposed rejection of scientific progress, or of “dogmatic” obscurantism opposed to the free search for truth. This myth has played a considerable cultural role. It has helped to anchor a number of scientists of good faith in the idea that there was an incompatibility between the spirit of science and its rules of research on the one hand and the Christian faith on the other. A tragic mutual incomprehension has been interpreted as the reflection of a fundamental opposition between science and faith. The clarifications furnished by recent historical studies enable us to state that this sad misunderstanding now belongs to the past.

The above plea that the Galileo case was all a big “misunderstanding” between science and faith implies the following unstated premise, *i.e.*, that the members of the papal commission, both ignoring their traditional patrimony and the new discoveries supporting geocentrism, went into their investigations having already accepted the belief that the Earth moves around the sun. Thus, the commission was biased and compromised from

the start. Moreover, even though the commission concedes that clerics of the 1600s condemned heliocentrism, the papal speechwriters believe they can politely wiggle out of the dilemma by pleading ignorance for the Church's part in the fiasco. They do so by making a subtle yet profound reference to "recent historical studies" that have supposedly put this "sad misunderstanding in the past." By the phrase "historical studies," the speech writers are referring to historical biblical criticism, which first appeared in Catholic Scripture studies in the late 1880s and which was cautiously permitted for at least some usage after Pius XII's 1943 encyclical, *Divino Afflante Spiritu*. Catholic liberals, however, believed Pius XII's encyclical gave them a *carte blanche* approval to deliteralize any portion of Scripture that suited their agenda. In fact, it would be no exaggeration to say that the liberals had been waiting for a little over 300 years (1633 to 1943) for the Church to relax the requirements for literal interpretation of Scripture in the wake of the Galileo affair. They were convinced that science had proven the Earth moved and thus there was only one sure-fire and face-saving way to coincide that scientific fact with both Scripture and the seventeenth century Catholic magisterium – (a) the Church must declare literal interpretation of Scripture is no longer required, and (b) Scripture is inspired and inerrant only in matters of salvation. Even the somewhat conservative *Catholic Encyclopedia* of 1910 took as an *a priori* fact that heliocentrism was correct and thus concluded that

...it is undeniable that the ecclesiastical authorities committed a grave and deplorable error, and sanctioned an altogether false principle as to the proper use of Scripture. Galileo and Foscarini rightly urged that Holy Writ is intended to teach men to go to heaven, not how the heavens go.⁴⁵²

Whatever damage would be sustained to the Church's credibility by her relinquishing of the literal interpretation of Holy Writ upon which she had depended for the 1900 years prior was of little consequence in the minds of the liberals who so desperately craved worldly appeasement, especially esteem from the scientific community. As they rationalized the dilemma, relinquishing literal interpretation was a small price to pay to save face for the Church. It was decided the modern Church could label the seventeenth century Church as an entity that employed enthusiastic but ignorant churchmen who did not have the privilege of being blessed with our "recent historical studies" in the finer art of biblical interpretation. The truth is, of course, that the modern Church caved into the pressure from the *status quo* of modern science and accepted heliocentrism as a fact, which

then led her to believe that she had to redo twenty centuries of traditional biblical interpretation. As even Feyerabend observes:

It is a pity that the Church of today, frightened by the universal noise made by the scientific wolves, prefers to howl with them instead of trying to teach them some manners.⁴⁵³

As we noted earlier, the Church was warned about the “howling” of “historical criticism” by Pope Leo XIII:

.... There has arisen, to the great detriment of religion, an inept method, dignified by the name of the “higher criticism,” which pretends to judge of the origin, integrity and authority of each Book from internal indications alone. It is clear, on the other hand, that in historical questions, such as the origin and the handing down of writings, the witness of history is of primary importance, and that historical investigation should be made with the utmost care; and that in this matter internal evidence is seldom of great value, except as confirmation. To look upon it in any other light will be to open the door to many evil consequences. It will make the enemies of religion much more bold and confident in attacking and mangling the Sacred Books; and this vaunted “higher criticism” will resolve itself into the reflection of the bias and the prejudice of the critics. It will not throw on the Scripture the light which is sought, or prove of any advantage to doctrine; it will only give rise to disagreement and dissension, those sure notes of error, which the critics in question so plentifully exhibit in their own persons; and seeing that most of them are tainted with false philosophy and rationalism, it must lead to the elimination from the sacred writings of all prophecy and miracle, and of everything else that is outside the natural order.⁴⁵⁴

Although the so-called “compatibility” between science and faith had been reached by accepting a moving Earth and non-literally interpreted Scriptures, true compatibility can only be reached by accepting a non-moving Earth and literally interpreted Scriptures. As Bellarmine wrote:

In Scripture there are many things which of themselves do not pertain to the faith, that is, which were not written because it is necessary to believe them. But it is necessary to believe them because they were written, as is evident in all the histories of the Old Testament, in the many histories in the Gospel and in the

Acts of the Apostles, in the greetings of Paul in his Epistles, and in other such things.⁴⁵⁵

But the movers and shakers of the modern scientific community have shown their outspoken aversion to the possibility of a non-moving Earth, even in the face of scientific evidence that adequately demonstrates the case. Although the evidence for a central Earth is just dripping from the data, the science community has ignored, silenced, stifled, and ridiculed such evidence as best as it can. Even the Pontifical Academy of Science has shown that its ears are closed to any suggestion that either evolution or heliocentrism are unproven theories, or that creationism and geocentrism (the “sciences” of Scripture) have any scientific evidence to support them. As noted earlier, it is not the scientific evidence that is in dispute; rather, it is the *interpretation* of that evidence from which Faith and Science often divide. As it stands, among scientists, interpretations of the evidence are always colored by biased philosophical and ideological presuppositions and ill-formed prejudices. For example, we noted in Geocentrism 101, when faced with the telescopic evidence that Earth might possibly be in the center of the universe, the renowned astronomer Edwin Hubble was forced by his presuppositions and prejudices to say that such an interpretation of the evidence must be “disregarded,” was “unwelcome” and “must be avoided”; it was “intolerable” and a “horror.”⁴⁵⁶ He quickly devised another theory of the universe just so he would not have to entertain a world with a central and non-moving Earth. Consequently, the scientific ideologues of today have now limited the debate to how the Church can reinterpret the Bible to preserve evolution and heliocentrism rather than encouraging scientists and theologians to give a correct interpretation to the scientific data in order to preserve the literal reading of Scripture.

Papal Speech: 11. From the Galileo affair we can learn a lesson which remains valid in relation to similar situations which occur today and which may occur in the future. In Galileo’s time, to depict the world as lacking an absolute physical reference point was, so to speak, inconceivable.

A universe with an absolute reference point is “inconceivable” to the modern scientific community. Hubble told us it was “intolerable” to have the Earth in the center of the universe. Einstein’s biographers said that it was “unthinkable” to conceive of the Earth not being in motion, and many other examples from Sagan to Hawking to Ellis to show that the scientific community not only advocates no absolute reference point, it has an absolute aversion to doing so.

But every experiment from Arago, Fresnel, Fizeau, Airy, Michelson-Morley, Miller, *etc.*, could have been interpreted very easily as a *bona fide* demonstration of a motionless Earth, but science refused to do so and it ended up having to change the very fundamentals of physics in Einstein's theory of Relativity to accommodate their own stubbornness. The reason is very simple. Modern science knows that if it admits to an absolute reference point or that Earth is motionless in the center of the universe, this could not have happened by chance. *Someone* would have had to place it there. They have all admitted it. This is no secret. But it is, indeed, a horrible thought to an atheist or an agnostic. It takes away any excuse he has for denying the existence of God, and most men simply will not accept being trapped in such a proverbial corner.

Papal Speech: And since the cosmos, as it was then known, was contained within the solar system alone, this reference point could only be situated in the earth or in the sun. Today, after Einstein and within the perspective of contemporary cosmology neither of these two reference points has the importance they once had. This observation, it goes without saying, is not directed against the validity of Galileo's position in the debate; it is only meant to show that often, beyond two partial and contrasting perceptions, there exists a wider perception which includes them and goes beyond both of them.

What most people do not know and what modern science is not willing to admit to them is that Einstein's theory was invented precisely to counter dozens of experiments performed in the 1800s and 1900s that, under then accepted scientific principles, clearly demonstrated the Earth was motionless in space. In other words, the experimental evidence could just as easily be interpreted to be against Einstein's theory and for geocentrism. The science community did everything it could to cover up this fact. The choice became clear: Einstein or the Church; Relativity or Scripture. One said everything was moving, the other said one object was motionless. One said matter shrinks, mass increases and time slows down; the other said nothing has changed and never will; the Earth is fixed and the celestial bodies keep time constant. The only significant thing that Einstein added to the debate was, ironically, to take the foundation out of Copernicanism, since in Einstein's relativity it is required to say the sun revolves around the Earth as it is to say the Earth revolves around the sun, and therefore geocentrism can never be discredited. Hence, the very answer that modern science invented in order to save itself from geocentrism is the very theory that allows geocentrism as the best alternative.

Papal Speech: 12. Another lesson which we can draw is that the different branches of knowledge call for different methods. Thanks to his intuition as a brilliant physicist and by relying on different arguments, Galileo, who practically invented the experimental method, understood why only the sun could function as the center of the world, as it was then known, that is to say, as a planetary system.

Whether Galileo was a “brilliant physicist” is debatable. The arguments (*e.g.*, the tides) he presented to the pope and the Holy Office to prove the Earth was rotating even he knew were specious. Other claims, such as the four moons circling Jupiter that he is purported to have discovered, do not prove heliocentrism. The circling moons only prove that the center of mass of that system is situated closer to Jupiter than it is to the four moons. As such, there is no proof from Galileo, or anyone else, that the Earth cannot serve as the center of mass for the universe. Modern science has shown us by its own mathematics that such a model is highly possible, and it would be the only such instance, since there can be only one center of mass for the whole universe. This location would make Earth the unique place that Scripture indicates it is, but it is an “unthinkable” alternative for modern science.

Papal Speech: The error of the theologians of the time, when they maintained the centrality of the earth, was to think that our understanding of the physical world’s structure was, in some way, imposed by the literal sense of Sacred Scripture.⁴⁵⁷

This is the most problematic sentence in the entire speech. As we noted previously from remarks made by Fr. Coyne (a member of the 1981 Galileo commission for science and epistemology), the speech makes a deliberate attempt to blame the entire matter on nameless “theologians” of the past. Five times the speech refers to these unidentified “theologians” as the cause of the problem, as if there was some tremendous difference between what the theologians were teaching and what the magisterium was upholding. In reality, there was no disagreement; and the mere attempt to make a distinction between the magisterium and the “theologians” casts a long shadow on the papal speech. The seventeenth century Catholic magisterium put its full weight behind the condemnation of Copernicus, Foscarini, Galileo, Kepler and any other would-be cosmologist that invented an alternate model to overturn geocentrism. Galileo was told directly by Pope Urban VIII in 1633 that his opinion that the Earth moved around the sun was “an absurd proposition and false in philosophy and formally heretical,” to the point that he sought the Grand Duke of Tuscany

to help him silence Galileo.⁴⁵⁸ In 1616, Pope Paul V was heavily involved in creating the canonical injunction forbidding Galileo to speak or write about Copernicanism. His papal commission of eleven cardinals found that heliocentrism was “a proposition that was absurd in philosophy and formally heretical, which contradicts the express meaning of Sacred Scripture in many places.”⁴⁵⁹ Every pope thereafter, barring the incidents of clerical chicanery in 1820 that deceived Pius VII, made the same or similar requirements, and no pope ever made a formal and official reversal of the condemnation of either Copernicanism or Galileo. If anything, the “theologians” were a secondary part of the whole process, since they had no authority, save by the pope and his Holy Office, to force their will on Galileo. It is absolutely unconscionable that the 1992 papal speech tried to pass this problem off on wayward “theologians” who supposedly imposed some unheard of hermeneutic on Scripture.

As for the comment that it was an “error” for these theologians to believe that “Scripture imposed itself on the structure of the physical world,” far from exonerating Cardinal Bellarmine as the papal speech attempted to do earlier, it has inadvertently derogated him as a blundering fool for having ever confronted Galileo with the argument that a moving Earth was “opposed to Scripture.” The popes who endorsed Bellarmine’s hermeneutic were also in error for not stopping Bellarmine from using such a fallacious argument. In fact, the Church for a dozen decades and counting was likewise totally deceived into thinking that literal interpretation was the right approach to Scripture and it should have realized that, perhaps, Galileo was sent from heaven, as it were, to tell them they had it all wrong. In fact, the whole Church, from the time of the Fathers onward for 1500 years had it all wrong because they mistakenly believed in a literal interpretation of Scripture and that cosmology could not be “opposed to Scripture.” How is it that such a pernicious and damnable “error” could have ever entered the Church so many centuries earlier and yet not be realized until some genius presented a specious argument that the tides could only be caused by a rotating Earth? How is it that not until two hundred years after Galileo’s “evidence,” the Church, which is supposed to be led by the Holy Spirit, did not even catch its own “error” until it decided to grant an imprimatur in 1820 to a Canon whose censor cooked the books in favor of Copernicus but forgot to take him off the *Index*? How is it possible that the hermeneutic of accepting what was “imposed by the literal sense of Sacred Scripture,” which worked so well in recognizing doctrines such as the Holy Eucharist (“This is my body”) and Baptismal Regeneration (“Unless a man be born of water”) and many other precious distillations from Sacred Scripture, could suddenly become so erroneous a methodology when applied to celestial motion that the modern Church finds itself constantly wringing its hands over the past and

feels compelled to introduce new fangled interpretive schemas that have virtually destroyed the Church from within? In the end, for the 1981 papal commission to use such weak and illogical arguments to save face for themselves is indeed a travesty.

For those who believe that the Church of the seventeenth century erred in the Galileo case, they need to ask themselves one very important and logical question: Is it the case that the Congregation of the Holy Office, which was put in place by Paul III one hundred years earlier to protect the Church from error, is the very institution that itself falls into error; which falls headlong into one of the most serious blunders ever committed in human history concerning one of the most fundamental of tasks given to the Church – the proper interpretation of Scripture? How is that possible?

Additionally, if the seventeenth century Church was wrong about the interpretation of Scripture, then, although the 1992 papal speech attempts to deflect blame off the magisterium by such calculated phrases as “the error of the theologians,” is this not itself an error for failing to put the blame squarely where it should be – on the very popes and cardinals who authorized it with the full weight of their magisterial offices? In effect, one falsehood (the error of the Inquisition against Galileo) has led to a second falsehood (the papal speech’s failure to expose the true perpetrators). Consequently, the very institution the modern Church sought to protect is the very institution that it destroys.

The only solution is for the modern Church to admit that the seventeenth century Church was correct, and the same Church is required to make it an officially recognized fact for the rest of the Church’s faithful. Otherwise, both the seventeenth century Church and the twenty-first century Church will be in error, and, unfortunately, barely able to be trusted again with anything short of clear and unequivocal infallible declarations of doctrine on any subject it touches.

A Closer Look at the So-Called “Error of the Theologians”

Since this statement in the papal speech is so significant, let’s take an even closer look at the line of argumentation it presents. First, let’s recall that five times in the 1992 papal speech Catholic “theologians” of Galileo’s day are criticized for being hermeneutically ignorant; and which, as we noted previously, deliberately leaves out the names of the popes who went happily along with these allegedly wayward “theologians.” The first four instances are as follows:

- Secondly, the geocentric representation of the world was commonly admitted in the culture of the time as fully agreeing

Chapter 8: John Paul II Reexamines the Galileo Case

with the teaching of the Bible of which certain expressions, taken literally seemed to affirm geocentrism. The problem posed by theologians of that age was, therefore, that of the compatibility between heliocentrism and Scripture. (p. 247)

- Thus the new science, with its methods and the freedom of research which they implied, obliged theologians to examine their own criteria of scriptural interpretation. Most of them did not know how to do so. (p. 248)
- Paradoxically, Galileo, a sincere believer, showed himself to be more perceptive in this regard than the theologians who opposed him. (p. 248)
- The majority of theologians did not recognize the formal distinction between Sacred Scripture and its interpretation, and this led them unduly to transpose into the realm of the doctrine of the faith a question which in fact pertained to scientific investigation. (p. 256)

Lastly, these dull-witted seventeenth century theologians get the ultimate intellectual castigation in a fifth and final reference to them:

- The error of the theologians of the time, when they maintained the centrality of the earth, was to think that our understanding of the physical world's structure was, in some way, imposed by the literal sense of Sacred Scripture. (p. 280)



First, we should repeat once again, as Ernan McMullin has revealed, the 1992 speech was “prepared for the pope,” and the most likely candidate for that authorship would be **Cardinal Paul Poupard**.⁴⁶⁰ Although this deflects some of the responsibility off the pope, it is only logical to assume that the pope must inevitably be accountable for its contents. The Vatican has not specified that the speech possesses any official level of authority, so it must be judged by its own merits or demerits. All in all, the speech seems to be worded both to emphasize a distancing of the modern Church from its medieval predecessors, and also an attempt, albeit a poor one, to prevent the Church at large from being indicted for any grave mistakes. Let’s see how the speech accomplished these two points.

Besides trying to get the Church off the hook by blaming the Galileo affair on nameless and expendable “theologians,” the speech seeks to save the Church at large from outright error by never admitting that the “error of the theologians” in Galileo’s day was, in fact, the error of rejecting heliocentrism. Not one word or phrase of the papal speech makes any such concession. The papal speech says that their only “error” was in deciding “that our understanding of the physical world’s structure was, in some way, imposed by the literal sense of Sacred Scripture.” Notice the sentence does not say that we cannot interpret Scripture’s cosmological passages literally. In fact, it could be concluded that the speech’s use of the clause, “imposed by the literal sense of Sacred Scripture” shows that modern theologians are admitting that, according to the tradition, the literal sense of Scripture is certainly *imposed* on the reader.

Since such is the case, the \$64,000 question is, how can the papal speech then conclude that this “imposition” does not require the reader *to apply* the literal sense of Scripture to the physical world? The reason is, today’s Catholic theologians no longer believe Scripture’s passages on cosmology are free from error and therefore there is no obligation to apply them to the physical world. For modern theologians, it is academic whether one interprets Scripture’s cosmological passages literally or figuratively. In either case, they are not applicable to the physical world because those particular scriptures are not accurate in their accounting of history or science.

How can they say this? Because after Vatican II, theologians no longer believed that such passages were inspired by the Holy Spirit. They now believe these particular passages were written by human redactors and therefore they contain not only errors but also myths and fiction. The only biblical passages that today’s Catholic theologians believe are error-free are those dealing strictly with salvation (and even those are subject to their private evaluation).

So, we come to the inevitable conclusion: the real reason modern theologians can turn the Galileo affair on its head is because they’ve already turned Scripture on its head; but they’ve turned Scripture on its head because they believe modern heliocentric science (*e.g.*, the Big Bang) forced them to that position. This chain-reaction process is stated clearly in the papal speech itself, as it says:

The upset caused by the Copernican system thus demanded epistemological reflection on the biblical sciences, an effort which later would produce abundant fruit in modern exegetical works and which has found sanction and a new stimulus in the Dogmatic Constitution *Dei Verbum* of the Second Vatican Council. (p. 250).

In other words, because they now believe “the Copernican system” has been proven by modern science, this forced them to cease reading the Bible literally and to adopt new theories of biblical transmission and interpretation (such as, the Wellhausen Documentary hypothesis; historical criticism; redaction criticism, form criticism, *etc.*), which then gave a “new stimulus” in how to understand Scripture, which understanding would be very different than what was previously understood in the Church of Galileo’s day. So, the conclusion of the modern theologians is rather ingenious: *one can interpret Scripture’s cosmological passages as literally as one wants, but since we now know from the Copernican revolution that they are not authored by God but are written by mere humans who lived in primitive cultures, then we are under no obligation to apply them to the physical world.*

Hence, when the papal speech refers to “the errors of the theologians” in Galileo’s day, it means that because those “theologians” were absent the Copernican proofs modern science claims to possess today, fell into the error of believing Scripture’s cosmological passages were inspired by the Holy Spirit and without error. They were not in error for interpreting Scripture’s cosmology in the literal sense but for believing that those passages were inspired by the Holy Spirit. Since modern theologians believe they now know better than the theologians of Galileo’s day (at least according to their novel interpretations of Vatican II’s *Dei Verbum* 11), the issue is not one of interpretation, *per se*, but one concerning whether Scripture intended to teach literal and accurate historical truth. The answer of modern theologians is clearly *negative*. The answer of the Church in Galileo’s time and prior for sixteen centuries, as even the 1992 papal speech admits, is *positive*. The papal speech, then, cleverly tries to deflect blame off the “Church” and place it on Her past “theologians” so as to make it appear that Church is not contradicting herself.

Essentially, the papal speech seeks to take the matter out of the scientific arena and put it squarely in the ecclesiastical and theological. It becomes an *internal* matter concerning Church protocol and is taken away from an *external* matter concerning the age-old battle between science and religion. In other words, if past “theologians” can be blamed for not following proper protocol regarding the true nature of Scripture (*i.e.*, that Scripture errs in matters of history and science), the modernists can then, as an internal matter, distance themselves from these medieval theologians and present themselves to modern academia as sophisticated and properly educated theologians who, if they were back in Galileo’s day, would have certainly done things differently. They now can safely assert that there was never a battle between religion and science, since those in the past who

sought to apply an errant Scripture to matters of history and science were clearly wrong.

In the end, however, we have a blatant contradiction. One group of “theologians,” the traditional or the modern, is wrong, because both propositions: (a) “the Bible’s history is without error,” and (b) “the Bible’s history contains error,” cannot be right. Modern theologians believe (b) is right only because they believe modern science has proven heliocentrism correct. This book has shown, however, that heliocentrism has not been proven correct and, in fact, the scientific evidence points to geocentrism as correct and that mainstream scientists have tried to cover up the evidence, and therefore have been lying to the Church. The Church, in turn, because it has lost much of its faith, has accepted the fabrications of pop science and, to a considerable degree, rejected both Scripture and tradition.

A Second Possibility

Another possibility for the meaning of the sentence “The error of the theologians of the time, when they maintained the centrality of the earth, was to think that our understanding of the physical world’s structure was, in some way, imposed by the literal sense of Sacred Scripture” is that the *literal sense* of a biblical passage sometimes requires that it not be interpreted literally but metaphorically. For example, when Jesus says in Matthew 5:29: “If your right eye offends you, pluck it out,” he is most likely using hyperbole or dramatic language to impress upon us the seriousness of sin but is not asking us to mutilate ourselves. The *literal interpretation* would be that we pluck out our eye. But the *literal sense* is that we avoid sin with the utmost scrupulosity, since the consequences are very grave. Hence, the papal speech could be saying that the “theologians” of Galileo’s day erred because they missed the *literal sense* of Scripture’s cosmological passages, that is, they missed the fact that the passages were only speaking about *appearances* in the sky, not the actual movements in the sky. Thus, in the case of Joshua 10:10-14, the papal speech may be implying that the seventeenth century theologians erred when they failed to see that Joshua’s command for the sun to stop moving was not to be interpreted literally anymore than “If your right eye offends you, pluck it out” is to be interpreted literally.

If that is the meaning of the papal speech, its offense is not a serious as saying that the “theologians” were in error for believing that all Scripture was inspired by the Holy Spirit and completely inerrant, but it is still a fallacious and misleading argument. The only reason one would refrain from plucking out his eye is on the basis of prior revelation concerning how to regard the human body, namely, that Jesus and Scripture forbid self-mutilation.⁴⁶¹ Similarly, the only reason a modernist could insist that

Scripture's cosmological passages are referring to *appearance* is that he has some prior knowledge that heliocentrism is correct and thus disallows a literal interpretation of Joshua 10:10-14. But the modernist has no such certain knowledge of heliocentrism. He doesn't, and he never will. Modern theologians can only cultivate a conviction to heliocentrism from certain sectors of modern academia, which also requires that they avoid other sectors that provide alternative interpretations of the scientific data (e.g., geocentric ones). As we have noted previously, the scientific data actually gives more evidence for geocentrism than heliocentrism, but most, if not all, modernist theologians have either not been shown the evidence or refuse to engage with it. It is the same reason that the Pontifical Academy of Science (the very institution to whom John Paul II gave his speech on Galileo in 1992) refuses to allow any creation scientists, no matter how credentialed, within its 100-member ranks. They simply refuse to allow alternative scientific data and views into the discussion.

So, the question remains, since the debate between the two is clearly a case of Aristotle's "Principle of Exclusive Disjunction for Contradictions" in which only one can be true and the other is false,⁴⁶² one of these two groups is wrong and the other is right. It is the thesis of this book that the modern theologians, and hence a great part of the modern "Church," is wrong. It is wrong about its belief that the Copernican system is correct; it is wrong in its belief that Scripture is in error when it speaks about history; it is wrong in its belief that Scripture is only inerrant when it speaks about salvation; and it is wrong when it says that Scripture is only communicating in phenomenal language when it declares that the sun moves and the Earth is motionless. It seems obvious that once this "Church" drops its belief in Copernicanism, it will also drop its non-traditional view of Scripture.

Papal Speech: Let us recall the celebrated saying attributed to Baronius "Spiritu Sancto mentem fuisse nos docere quomodo ad coelum eatur, non quomodo coelum gradiatur."

This is the famous statement often translated as: "The Holy Spirit tells us how to go to heaven, not how the heavens go." In some colloquial versions "Holy Scripture" replaces "Holy Spirit." The speech says that it has been "attributed" to Cardinal Baronius because no exact quote exists from Baronius' writings.⁴⁶³ It is not quoting of any magisterial decree or even an authoritative statement, but a mere cliché that may have been circulating in the pro-Galilean *Accademia die Lincei* circles during the seventeenth century controversy. It has no more weight than any other opinion being propagated at that time, and thus it is quite inappropriate in a 1992 papal address. Cardinal Poupard's resorting to such specious

statements perhaps shows the pressure he was under to provide some plausibility for his assault on the literal interpretation of Scripture.

More to the point, however, is that Baronius' statement is false. No one in the whole history of Catholic Scripture study up to that point had ever uttered such a denial on the domain of either the Holy Spirit's teaching or the content of Holy Writ. Baronius' quip can easily be countered with one that Robert Bellarmine was sure to have thought: "The Holy Spirit tells us how the heavens go, as well as how to get to heaven." Unfortunately, however, the papal speech has made exegetical delinquents of those of the Church who lived prior to and in the time of Baronius' cliché. If the Bible does not concern itself with "how the heavens go" then why did the Fathers of the Church, in unanimous consent, believe it to be so, and why did Cardinal Bellarmine and his fellow cardinals, with the popes afterwards who for decades sanctioned their verdicts against Galileo, ever dare say that, because it was spoken by the Holy Spirit, a motionless Earth and a moving sun were "a matter of faith," *ex parte dicentis*?

Papal Speech: In fact, the Bible does not concern itself with the details of the physical world, the understanding of which is the competence of human experience and reasoning. There exist two realms of knowledge, one which has its source in Revelation and one which reason can discover by its own power. To the latter belong especially the experimental sciences and philosophy. The distinction between the two realms of knowledge ought not to be understood as opposition. The two realms are not altogether foreign to each other, they have points of contact. The methodologies proper to each make it possible to bring out different aspects of reality.

The veracity of this statement depends on what is meant by "details." It is certainly true that the Bible does not get into the micro world of science, but it does address the macro world quite handily. Of the six days God has given him to labor, it is man's quest to determine how the components of the universal machine work. He can do so once he knows, from divine revelation, the basic macro-structure. If he is wrong on the macro structure, he will either be wrong on the micro structure, or he will amass a numerous amount of details without ever being able to put them together in a unified whole. This has been man's plight ever since the Enlightenment's rationalism made him think he could amass enough particulars to make his own universals. Modern man found out to his utter dismay that this was an impossible task. The universals must be given to him, and even some details must be added as well, otherwise man will be

very confused in his intellectual pursuits. The “human reasoning and experience” to which the speech refers has severe limitations. In fact, the most important thing our reason should tell us is that we can be very wrong in our reasonings about the world if we do not start with the proper foundation. Our reasoning should lead us to realize that we can never figure out everything by our own reason, and thus our reason should lead us to revelation as a guiding help. Reason that seeks help from revelation is the only reasonable option for finite man. Our reason should lead us to ask why Scripture pays such an inordinate amount of attention describing the cosmos. As we noted earlier, Scripture is so certain about the existence of an immobile Earth that it uses that fact to vouch for God’s veracity and faithfulness, as is the case in Psalm 96:9-11. Both are immovable rocks that cannot be disturbed, thus one testifies to the strength of the other.

As for the papal speech’s comment that “the latter belong to the experimental sciences and philosophy,” it is a fact that scientific experiments can be misinterpreted just as easily as Cardinal Poupard believes the Bible can be misinterpreted. Experimental science is not an end in itself. There is no monolithic consensus of belief among scientists about even the most general of issues. Scientists continually argue with one another over some of the most basic issues. The only thing upon which they all seem to agree is that they want science to be their answer and religion to take a back seat. Modern academia has already made up its mind how it wants to interpret the scientific data and understand the world, and in that particular understanding it has little toleration for the propositions of religion.

Papal Speech: III. 13. Your Academy conducts its work with this outlook. Its principal task is to promote the advancement of knowledge with respect for the legitimate freedom of science(8) which the Apostolic See expressly acknowledges in the statutes of your institution.

What is important in a scientific or philosophic theory is above all that it should be true or, at least, seriously and solidly grounded. And the purpose of your Academy is precisely to discern and to make known, in the present state of science and within its proper limits, what can be regarded as an acquired truth or at least as enjoying such a degree of probability that it would be imprudent and unreasonable to reject it. In this way unnecessary conflicts can be avoided.

Freedom always assumes responsibility; it requires one to know the boundaries of one’s freedom. Science has freedom within the constraints

of science, but science does not have the freedom to impose its unproven theories on religion and Scripture. In fact, science has provided very little proof for its many and varied theories. It has barely scratched the surface in understanding this very complicated world. It is high time for science to cease thinking that it has all the answers to life and the cosmos, or that it will ever attain anything close to complete knowledge on its own. This is why Pius X said the following:

Human science gains greatly from revelation, for the latter opens out new horizons and makes known sooner other truths of the natural order, and because it opens the true road to investigation and keeps it safe from errors of application and of method. Thus does the lighthouse show many things they otherwise would not see, while it points out the rocks on which the vessel would suffer shipwreck.⁴⁶⁴

The fact is, science continually overturns science, and the overturning always occurs when the previous science was not built on the proper foundation. Like a hurricane coming through a Midwest town, a scientific edifice can be destroyed overnight if it is built on a faulty foundation. Modern geocentric science, which has only mounted its opposition with sophistication in the last fifty years or so, is on the horizon to overturn anti-geocentric science. The difference between the two camps is that geocentric science has the proper foundation, for it is built on divine revelation, patristic consensus and magisterial authority, all of which coincide with the scientific evidence that is now being discovered on a daily basis. Here, as always, proper interpretation of the scientific data is paramount. When a scientist is confronted with evidence that the Earth is in the center of the universe, he is not permitted to hide his head in the sand like the proverbial ostrich complaining that such a conclusion is “intolerable” and “must be avoided at all costs,” as Edwin Hubble did in the 1930s. If he sees evidence from numerous experiments that the Earth may not be moving in space, he cannot dismiss it and claim that such conclusions are “unthinkable,” as Albert Einstein did in 1905, developing a whole new and convoluted relativistic physics just to avoid the possibility of a fixed Earth. The scientific evidence shows that there is, indeed, a high “degree of probability” that the Earth is central and immobile, but modern academia refuses to listen. It needs the guiding hand of religion to keep it honest, forcing it to interpret the scientific data with integrity, without bias and prejudice against the tenets of religion. At the least, it should offer both possibilities to its students. But that is not what we see today. Modern science has taken the cosmos as its hostage and will not let anyone register a dissenting opinion in the halls of academia.

Papal Speech: Those who engage in scientific and technological research admit as the premise of its progress, that the world is not a chaos but a “cosmos” – that is to say, that there exist order and natural laws which can be grasped and examined, and which, for this reason, have a certain affinity with the spirit. Einstein used to say: “What is eternally incomprehensible in the world is that it is comprehensible.”(9) This intelligibility, attested to by the marvelous discoveries of science and technology, leads us, in the last analysis, to that transcendent and primordial Thought imprinted on all things.

The fact is, Einstein did not believe in a personal God, and his moral life was almost totally bankrupt. Divorce, adultery, child abandonment, plagiarism and other moral deficiencies plagued him his whole life. In addition, we have seen from the scientific evidence that Einstein, when faced with two possible solutions to both Maxwell’s equations and the Michelson-Morley experiment, refused to accept the biblical one, which had the Earth motionless in space and kept physical laws the same. Instead, Einstein chose the solution that put the Earth in motion and necessitated a total revamping of physics.

Moreover, the papal speech should be more forthright about Einstein’s world. It is hardly “comprehensible.” A haunted and uncertain world in which one twin ages faster than the other, where one clock slows down and the other speeds up, where objects shrink and their mass increases when moved, where everybody is in motion and no absolute place exists from which to measure their distances, where up is down and left is right, where mass is energy and force is imaginary. This bizarre menagerie is what is presented as the “comprehensible” world of Albert Einstein, the very world he was required to create in the minds of gullible men in order to keep the Earth moving in space in spite of the scientific evidence that said it was motionless.

Lumen Gentium 12: “The Whole Body...Cannot Err”

Perhaps the most significant reason why the doctrine of geocentrism may be considered infallible comes, quite surprisingly, from one of the more modern declarations concerning the teachings of the Church. Earlier we cited *Lumen Gentium* 25 to show that Catholics are required to give obedience to both infallible and non-infallible teachings of the Church. Yet *Lumen Gentium* contains an even more significant requirement for obedience in regards to doctrine, and it certainly seems to make the geocentric doctrine infallible. It is stated in Paragraph 12:

The whole body of the faithful who have an anointing that comes from the holy one (cf. 1 Jn. 2:20 and 27)⁴⁶⁵ cannot err in matters of belief. This characteristic is shown in the supernatural appreciation of the faith (*sensus fidei*)⁴⁶⁶ of the whole people, when, “from the bishops to the last of the faithful”⁴⁶⁷ they manifest a universal consent in matters of faith and morals. By this appreciation of the faith, aroused and sustained by the Spirit of truth, the People of God, guided by the sacred teaching authority (*magisterium*), and obeying it, receives not the mere word of men, but truly the word of God (cf. 1 Th 2:13),⁴⁶⁸ the faith once for all delivered to the saints (cf. Jude 3).⁴⁶⁹ The people unfailingly adheres to this faith, penetrates it more deeply with right judgment, and applies it more fully in daily life.⁴⁷⁰

Since it is a fact that the “People of God,” which includes “the bishops to the last of the faithful,” have believed unanimously, firmly and without equivocation in the doctrine of the Earth’s immobility from the beginning of the Catholic Church and throughout two millennia, and who were “guided by the sacred teaching authority” to do so, this belief necessarily fulfills the criteria of *Lumen Gentium* 12 that these same People of God “cannot err.” It is an undeniable fact that all the Fathers, all the medievals, all the bishops, priests, saints, doctors, theologians and the remaining Christian faithful of every nation believed in the doctrine of geocentrism. Additionally, three popes and their Holy Offices officially confirmed this absolute consensus in the 17th century against a few men who, because of their own misguided convictions, sought to depart from that consensus, making the attempt in the wake of unproven scientific claims with the express purpose of reinstituting a novel and subjective interpretation of Holy Writ.

As we have seen, even many years after modern science began to treat heliocentrism as a scientific fact, the Catholic faithful still maintained their vigilance for geocentric doctrine. It has only been in the last one hundred years or so that this consensus has waned.

Because of the waning consensus, some objectors might themselves appeal to the principle of *Lumen Gentium* 12 and posit that the Holy Spirit is now teaching the “People of God” that heliocentrism has been correct all along. But that notion, of course, is impossible, since the “People of God” could not have been “aroused and sustained by the Spirit of truth” into believing that geocentrism was correct for 1900 years and then have the Spirit suddenly change His mind to teach them the opposite. It would make the Holy Spirit a liar, which is certainly impossible. The reality is, if the “People of God” were led to believe that geocentrism was the truth, and which was, according to the stipulations of *Lumen Gentium* 12,

“guided by the magisterium” to confirm their consensus, then there is simply no possibility that a change in their belief could be understood as a movement of the Holy Spirit.

And if it wasn't the Holy Spirit, then who was it?



“The most recent scientific findings vindicate the Church of 1633.”

Fr. Walter Brandmüller, Vatican's Chief Historian⁴⁷¹

“Although Galileo did not provide a decisive demonstration of Copernicanism, neither did Newton, Bradley or Foucault.”

Attributed to Agostino Gemelli,
President of the Pontifical Academy of Science, 1941⁴⁷²

“Newton in his third book assumes the hypothesis of the Earth's movement...But we profess obedience to the decrees made by the Supreme Pontiffs against the movement of the Earth.”

Thomas Le Seur and François Jacquier, editors of Newton's
Principia Mathematica, 1739, 1833⁴⁷³

“The Earth, also, God commanded to stand in the midst of the world, rooted in its own foundation.”

The Catechism of the Council of Trent, 1566

Endnotes

¹ *The Literal Meaning of Genesis*, Book 1, Chapter 20, Para. 41.

² The words of Slotte to Natalie to prove the philosophical basis to the 20th century German revolution (Herman Wouk, *The Winds of War*, Pocket Edition, 1973, p. 610).

³ John 3:12.

⁴ Joseph Henry, American physicist (d. 1878), attributed, not verified.

⁵ Albert Einstein, *Ideas and Opinions*, p. 266.

⁶ Ivan R. King, *The Unfolding Universe*, 1976, p. 132, emphasis added. Ivan King was professor of astronomy at the University of California, Berkeley.

⁷ Giorgio de Santillana, Massachusetts Institute of Technology, *The Crime of Galileo*, 1962, editor's preface, pp. viii-ix.

⁸ Dava Sobel, *Galileo's Daughter*, 1999, p. 153.

⁹ These are some of the various reasons given for the Church's rejection of Galileo's theory in the opening pages of Giorgio Santillana's *The Crime of Galileo* (pp. ix, xv, xx), a very terse and satirically worded account of the Galileo affair which is highly critical of the Catholic Church's role and very favorable to Galileo.

¹⁰ Zur Farbenlehre, Materialien zur Geschichte der Farbenlehre, Frankfurt am Main, 1991, Seite 666.

¹¹ Alexandre Koyré, "Galileo and Plato," *Journal of the History of Ideas*, vol. 4, no. 4, Oct. 1943.

¹² Alexandre Koyré, *From the Closed World to the Infinite Universe*, 1968, pp. 29, 43, 276).

¹³ Arthur Koestler, *The Sleepwalkers*, p. 13.

¹⁴ James Burke, *The Day the Universe Changed*, p. 135.

¹⁵ *Ibid.*, pp. 7-8.

¹⁶ Pope Benedict's farewell address to priests at the Vatican, as reported by *L'Osservatore Romano*, February 14, 2013, page 4, paragraph #5 in the article "Al concilio pieno di entusiasmo e speranza."

¹⁷ See Fr. Brian Harrison's comprehensive paper "Does Vatican Council II Allow for Errors in Sacred Scripture" at <http://www.rtforum.org/lt/lt145-6.html>

¹⁸ Cardinal Walter Kasper made the long-awaited admission in *L'Osservatore Romano* on April 12, 2013.

¹⁹ Danny Faulkner, PhD, "Geocentrism and Creation," *Technical Journal*, August 1, 2001, at <http://www.answersingenesis.org/articles/tj/v15/n2/geocentrism>. See my rebuttal to Faulkner at www.galileowaswrong.com.

²⁰ Extracts taken from "A Turning Point for Europe? The Church and Modernity in the Europe of Upheavals," Paoline Editions, 1992, pp. 76-79. From a speech given on March 15, 1990 in Parma, Italy. English translation by the *National Catholic Register*. <http://ncronline.org/node/11541>

²¹ *Einstein: The Life and Times*, 1984, pp. 109-110.

²² Abraham Pais, *Subtle is the Lord*, 1982, 2005, p. 311.

²³ Albert Einstein and Leopold Infeld, *The Evolution of Physics*, 1938, 1966, pp. 154, 212.

²⁴ Einstein's October 1914 paper titled: "Die formale Grundlage der allgemeinen Relativitätstheorie," trans. by Carl Hoefer, in *Mach's Principle: From Newton's Bucket to Quantum Gravity*, eds. Julian Barbour and Herbert Pfister, pp. 69, 71.

²⁵ I. Bernard Cohen, *Birth of a New Physics*, revised and updated, 1985, p. 78.

²⁶ The first quote taken from Fred Hoyle's *Astronomy and Cosmology*, 1975, p. 416; the second, from Hoyle's *Nicolaus Copernicus: An Essay on His Life and Work*, p. 88.

²⁷ The words of Tiedeman Giese in his letter to Rheticus of July 26, 1543 that are included in Copernicus' *Briefe Texte*, letter no. 194, 359, the original Latin being: "opusculum tuum, quo a sacrarum scripturarum dissidentia aptissime vindicasti telluris motum." Cited in *The Church and Galileo*, p. 27.

²⁸ Rheticus' book was later published in 1651 by Johannes van Waersberge with the title *Cujusdam anonymi epistola de terrae motu*. A Latin text with an English translation has been published with the title: *G. J. Rheticus' Treatise on Holy Scripture and the Motion of the Earth*, Reyer Hooykaas, Amsterdam, North-Holland, 1984, as cited in *The Church and Galileo*, pp. 13, 27. But as Lerner notes: "This does not prevent him...from seeking to impose a heliocentric interpretation on certain passages of Scripture; here he sometimes goes well beyond the limits of the plausible" which "ran contrary...to the principle of accommodation that he had himself first called upon in his defense against the critics of Copernicanism. Rheticus does recognize, however, that the passages of Scripture quoted by him as implicitly heliocentric contain only 'obscure allusions' to the motion of the earth" (*ibid.*, "The Heliocentric 'Heresy,'" p. 13).

²⁹ *Cujusdam anonymi epistola de terrae motu*, p. 44, as cited in *The Church and Galileo*, pp. 12-13, 27.

³⁰ Also known as the Congregation of the Holy Office or the Sacred Congregation. In 1965, Pope Paul VI changed the name to the Congregation for the Doctrine of the Faith.

³¹ The work's title is: *On the Highest Immobile Heaven and the Lowest Stable Earth, and All Other Movable Heavens and Intermediate Elements*. Tolsani insisted Copernicus' teaching "could easily provoke discord between Catholic commentators on Holy Scripture and those who have resolutely decided to follow this false opinion. It is in order to avoid such scandal that we have written this short work" (English translation of the French translation *Aux origins*, p. 708, cited in *The Church and Galileo*, pp. 15-16).

³² *In Sphaeram Ioannis de Sacro Bosco Commentarius*, Rome 1570, pp. 247-248, cited in *The Church and Galileo*, p. 18, 31. Clavius uses Psalms 19:5-6; 104:5 and Ecclesiastes 1:4-6 for his main support. See also: James Lattis' *Between Copernicus and Galileo: Christoph Clavius and the Collapse of Ptolemaic Cosmology*, University of Chicago Press, 1994.

³³ *The Roman Catechism, The Catechism of the Council of Trent*, translated by John A. McHugh, O.P. and Charles J. Callan, O.P., Tan Publishing, 1982, p. 27. This particular translation has a Nihil Obstat and Imprimatur, issued January 1923. The 1829 version says the same: "[God] so ordered the celestial orbs in a certain and constant course, that nothing can be seen more variable than their continual revolution, nothing more certain than that variety" (*Catechism of the Council of Trent*, Article 16, Chapter 2, translated by Fr. O'Donovan, Dublin, James Duffy and Sons, n. d., p. 38).

³⁴ *Ibid.*, p. 28. The 1829 version reads: "God also, by his word, commanded the earth to stand in the midst of the world, 'founded upon its own basis'" (Article 18, Chapter 1). NB: the word "world" is from the Latin *mundus*, which means "universe." The clause "founded upon its own basis" may refer to the fact that, if the Earth were the universe's center of mass, it would be independent of all inertial forces, remaining in the center while neither resting upon or suspended by any force or object. As Job 26:7 says: "He...hangs the earth upon nothing."

³⁵ Argued by David Palm in a 2010 debate with the author. Palm states: "Notice again that the Catechism states that God clothed the *terram* with 'trees and every variety of plant and flower.' He also filled it with living creatures, 'as He had already filled the air and water.' In other words, this *terram* is something distinct from the air and the water. The passage makes perfect sense if *terram* means 'dry land,' as it does in Gen 1:10. It makes no sense whatsoever if it means the entire earth, as in 'the globe'—which is what the neo-geo needs it to say." (See "Response to David Palm on Tridentine Catechism," Debate 2, at <http://www.galileowaswrong.com>).

³⁶ *Ibid.*, p. xxv.

³⁷ "Antwort auf Roeslini Diskurs," Kepler's *Gesammelte Werke*, 4:106, lines 18-20, translated by Michel-Pierre Lerner in *The Church and Galileo*, p. 19. Lerner also notes Kepler saying the same in 1605 (*ibid.*, 15:183, no. 340, lines 95-102).

³⁸ The-Dinner-Party.jpg%3Bhttp%253A%252F%252Fwww.1st-art-gallery.com%252FJules-Grun%252FThe-Dinner-Party.html%3B600%3B371

³⁹ Cosimo II had ascended the throne upon his father's death, Ferdinand I, in 1609. Ferdinand I had appointed Galileo to the professorship of mathematics at the university of Pisa in 1588. Galileo had tutored Cosimo during summers when he was a lad. Galileo dedicated his book *Siderius Nuncius* (the first public admission of his heliocentrism) to Cosimo in 1610 and Cosimo in turn gave Galileo a court position in the same year. Cosimo became ill in 1615 when Galileo's troubles with Bellarmine were just beginning, and he died in 1620. His son, Ferdinand (II), ascended the throne, but since he was only ten his grandmother, Christina, and mother, Maria Magdalena of Austria, governed the palace affairs. Ferdinand was not close to Galileo and did not involve himself in the cosmological disputes. He died in 1670.

⁴⁰ In *Le Opere di Galileo Galilei*, vol. 5, pp. 284, 286. The Italian reads: "Io dico che questo luogo [Js 10:12] ci mostra manifestamente la falsità e impossibilità del mondano sistema Aristotelico e Tolemaico, e all'incontro benissimo s'accomoda co'l Copernicano." The same is reiterated in the *Letter to Christina*, *ibid.*, vol. 5, pp. 343-348, cited in *The Church and Galileo*, p. 33.

⁴¹ Original Italian: "Quant' all' opinione di Copernico, Bellarmino istesso, ch' è de' capi nelle congregatione di queste cose, m' ha detto che l' ha per heretica, e che il moto della terra, senza dubio alcuno, è contro la Scrittura" (*Le Opere di Galileo Galilei*, vol. 12, p. 129).

⁴² Original Italian: "E quanto al Copernico, dice S. S. Ill.^{ma} non poter credere che si sia per proibire, ma il peggio che possa accaderli, quanto a lui, crede che potessi essere il mettervi qualche postilla, che la sua dottrina fusse introdotta gli epiciicli e poi non gli credone" (*Le Opere di Galileo Galilei*, vol. 12, p. 151).

⁴³ "In them he has set a tent for the sun, which comes forth like a bridegroom leaving his chamber, and like a strong man runs its course with joy. Its rising is from the end of the heavens, and its circuit to the end of them," LXX Ps 18:5-6.

⁴⁴ Original Italian: "...molto più ciò si avrebbe ottenuto dalla vera e reale...qual è il sapere la vera disposizione delle parti del mondo" (*Le Opere di Galileo Galilei*, letter to Dini, March 23, 1615, vol. 5, p. 298), from Blackwell's translation in *Galileo, Bellarmine and the Bible*, p. 209.

⁴⁵ *Ibid.*, pp. 210-211.

⁴⁶ *Ibid.*, pp. 211, 212.

⁴⁷ As cited in Blackwell's *Galileo, Bellarmine and the Bible*, p. 255.

⁴⁸ "...facciano prudentemente a contentarsi di parlare *ex suppositione* e non assolutamente, come io ho sempre creduto che habbi parlato il Copernico" (*Le Opere di Galileo Galilei*, vol. 12, p. 171).

⁴⁹ "...ma anco di nuocere alla Santa Fede con rendere false le Scritture Sante" (*ibid.*).

⁵⁰ "molti modi di esporre le Sante Scritture, ma non li ha applicati in particolare" (*ibid.*).

⁵¹ "...il Concilio proibisce esporre le Scritture contra il commune consenso de'Santi Padri" (*ibid.*, p. 172).

⁵² "...trovarà che tutti convengono in esporre ad literam ch'il sole è nel cielo e sta nel centro del mondo, immobile" (*ibid.*).

⁵³ "Nè si può rispondere che questa non sia material di fede, perchè se non è material di fede *ex parte obiecti*, è material di fede *ex parte decentis*" (*ibid.*).

⁵⁴ "...quando ci fusse vera demonstratione..." (*ibid.*).

⁵⁵ "...alhora bisogneria andar con molta consideratione in esplicare le Scritture che paiono contrarie..." (*ibid.*).

⁵⁶ "Ma io non crederò che ci sia tal dimostratione, fin che non mi sia mostrata" (*ibid.*). We depart here from Blackwell's translation: "But I do not believe that there is such a demonstration, for it has not been shown to me," for two reasons: (1) the verb *crederò* is future and should be translated: "I will not believe" as opposed to "I do not believe," and (2) "fin" should be translated "until," not "for it has not." Normally "fino" is chosen, as it is in modern Italian, but classical Italian often left off the final "o." The correct translation of Bellarmine's words, then, are: "But I will not believe that there is such a demonstration until (or, until such time as) it is shown to me," which Fantoli adopts from Finocchiaro (*Galileo: For Copernicanism and for the Church*, pp. 184, 187).

⁵⁷ "...et in caso di dubbio non si dee lasciare la Scrittura Santa, esposta da' Santi Padri" (*ibid.*).

⁵⁸ "fu Salomone, il quale non solo parlò ispirato da Dio, ma fu huomo sopra tutti gli altri sapientissimo e dottissimo nelle scienze humane e nella cognitione delle cose create, e tutta questa sapienza l'hebbe da Dio" (*ibid.*).

⁵⁹ "...o che si potesse dimostrare." (*ibid.*).

⁶⁰ "...nondimeno conosce che questo è errore e lo corregge" (*ibid.*).

⁶¹ "ma quanto al sole e la terra, nessuno savio è che habbia bisogno di correggere l'errore, perchè chiaramente esperimenta che la terra sta ferma e che l'occhio non s'inganna quando giudica che il sole si muove, come anco non s'inganna quando giudica che la luna e le stele si muovano." (*ibid.*).

⁶² As translated by Richard Blackwell in *Galileo, Bellarmine and the Bible*, pp. 265-267, except for "fin" noted above, in addition to the word "rotates" which has been replaced by "revolves." Underlining has been added to emphasize the salient points.

⁶³ "The Church's Ban on Copernicanism," in *The Church and Galileo*, pp. 180-181. We quote McMullin only because he correctly assesses Bellarmine's absolute resolve on the issue, for McMullin himself holds that "He [Bellarmine] was wrong, and Galileo was right" (*ibid.*, p. 181), since he believes modern science has proven heliocentrism.

⁶⁴ *Galileo: For Copernicanism and the Church*, p. 481. Fantoli, Coyne and McMullin naturally think that Bellarmine's throwing down of the gauntlet ruined the Church's standing in the world, as does Richard Westfall, stating: "The net result of Cardinal Bellarmine's devoted effort to defend his Church was to place an incubus to its back that it struggles still to shake off" (*Essays on the Trial of Galileo*, Vatican City: Vatican Observatory Publications, 1989, p. 24). That conclusion, of course, would only be valid if Bellarmine was proven wrong and Copernicanism proven right.

⁶⁵ *De controversiis*, II, II, 12, as found in Roberto Cardinal Bellarmine, S.J., *Opera omnia*, cited in Blackwell's *Galileo, Bellarmine and the Bible*, p. 31.

⁶⁶ *De controversiis*, I, I, 4, 12, *ibid.*, p. 32.

⁶⁷ "The Church's Ban on Copernicanism," in *The Church and Galileo*, p. 179, emphasis in original. (NB: Abraham actually had more than two children, since he had at least six more with Keturah (Gn 25:1-2), but Bellarmine was only referring to the sons Abraham had with Hagar and Sarah, respectively). McMullin adds: "This extreme form of biblical literalism was not peculiar to Bellarmine, of course. It is best understood as the fruit of the bitter years of controversy between the Reform and the Counter-Reform, controversy in which Bellarmine himself played a leading role" (*ibid.*). What McMullin fails to consider, however, is that the same form of "extreme literalism" allowed Bellarmine to defend sacramental theology against Protestant attempts to deliteralize the interpretation of such passages as John 3:5; 6:53; 20:23 dealing with Baptism, the Eucharist and Confession, respectively.

- ⁶⁸ Foscarini published his work in Naples in 1615, titled: *Lettera Sopra L'Opinione de' Pittagorici e del Copernico, della Mobilita della Terra e Stabilita del Sole, e il Nuovo Pittagorico Sistema del Mondo*.
- ⁶⁹ Douglas C. Giancoli, *Physics: Principles with Applications*, 1985, pp. 613-614 and 1980, p. 625.
- ⁷⁰ Council of Trent, Session IV.
- ⁷¹ Vatican Council I, Chapter II, Denz. 1788.
- ⁷² *Ad Gentes*, Ch. 3, 22.
- ⁷³ *Exposition of the Christian Faith*, Bk V, Ch II.
- ⁷⁴ *Against the Heathen*, Part 1, No. 27.
- ⁷⁵ *Why the Christians do not Offer Sacrifices*, Ch XIII.
- ⁷⁶ *City of God*, Bk XIII, Ch 18.
- ⁷⁷ *Tractates*, XCI, Ch XV, 24-25, 2.
- ⁷⁸ *Confessions*, Bk XI, Ch XXIII, 30.
- ⁷⁹ *Nine Homilies on the Hexameron*, 10.
- ⁸⁰ *The Mystic Meaning of the Tabernacle*, Bk V, Ch VI; Clement of Rome, *Stromata*, Bk V.
- ⁸¹ *Homily on Titus*, III.
- ⁸² *Homilies to Antioch*, Homily XII.
- ⁸³ *First Epistle to the Corinthians*, Ch XX.
- ⁸⁴ *Homily II*, Ch XLV.
- ⁸⁵ *Catechetical Lectures*, VI, 3.
- ⁸⁶ *Orations*, 5, xxv.
- ⁸⁷ *On the Making of Man*, 30, 1, 1.
- ⁸⁸ *Answer to Eunomius' Second Book*.
- ⁸⁹ *On the Soul and Resurrection*.
- ⁹⁰ *On Ecclesiastes*, Ch 1, 2.
- ⁹¹ *Against Heresies*, Bk I, Ch XVII, 1.
- ⁹² *Against the Pelagians*, Bk I, 1, 9.
- ⁹³ *The Orthodox Faith*, Bk 2, Ch 7.
- ⁹⁴ *Dialogue with Trypho*, Ch CXIII.
- ⁹⁵ *Dialogue with Trypho*, Ch CXXXII.
- ⁹⁶ *To Diognetes*, Ch 7.
- ⁹⁷ *Concerning Free Will*.
- ⁹⁸ *Octavius*, Ch xvii.
- ⁹⁹ *On Fasting*, Ch X.
- ¹⁰⁰ *Summa Theologica*, "Treatise on the Work of the Six Days," Question 68, Article 4. By "many heavens" Thomas is referring to the three ways in which Scripture uses the word "heaven" (the Earth's atmosphere; the starry cosmos; and the third heaven as God's domain above the firmament).
- ¹⁰¹ *Summa Theologica*, Bk 1, Question 74, Art 3. Objection #7: "Further, 'first,' not 'one,' corresponds to 'second' and 'third.' It should therefore have been said that, 'The evening and the morning were the first day,' rather than 'one day.'"
- ¹⁰² Pocket edition, p. 610.
- ¹⁰³ I. Bernard Cohen, *Revolution in Science*, p. 492.
- ¹⁰⁴ Galileo wrote it quite poetically in his native Italian to Madama Cristina di Lorena: "...ciò è l'intenzione dello Spirito Santo essere d'insegnarci come si vadia al cielo, e non come vadia il cielo" ("that is the intention of the Holy Spirit which is to teach us how to go to heaven, and not how the heavens go") and attributes it as coming from "Io qui direi quello che intesi da persona ecclesiastic costituita in eminentissimo grado" ("Here I refer to the understandings of an ecclesiastical person in a very eminent position"), who most

suppose is Cardinal Cesare Baronio (*Le Opere di Galileo Galilei*, 1968, vol. 5, p. 319, lines 25-28).

¹⁰⁵ George Sim Johnston, "The Galileo Affair," *Lay Witness*, Vol. 14, No. 7, April 1993, p. 5. Johnston's claim that the mustard seed upsets the inerrancy of Scripture is shortsighted and fails to contextualize. Jesus was referring to the known seeds of the land of Palestine, for in that region the mustard seed was, indeed, the smallest seed.

¹⁰⁶ Pope Pius X, encyclical of March 12, 1904, *Iucunda Sane*, 35.

¹⁰⁷ *Orations*, II.

¹⁰⁸ Another version is: "we do not read in the Gospel that the Lord said: I will send you the Paraclete to teach you how the sun and moon move. Because he wished to make them Christians, not mathematicians" (Paul Newall, "The Galileo Affair," The Galilian Manuscripts Library, www.galilean-library.org, p. 8, citing *De Actis cum Felice Manichaeio*, I, 2).

¹⁰⁹ V, 337; trans. By Finocchiaro 1989, 109. Annibale Fantoli, Galileo: *For Copernicanism and the Church*, translation by George V. Coyne, S. J., second edition, 1996, p. 203. In *The Case of Galileo*, 2012, Fantoli says: "And he [Augustine] adds that the sacred writers had no intention to teach anything about the form and figure of the heavens nor about any questions about nature 'since such knowledge was of no use to salvation'" (*The Case of Galileo*, p. 40).

¹¹⁰ *The Literal Meaning of Genesis*, Book 1, Chapter 20, Para. 41, Ancient Christian Writers, *ibid.*, p. 44.

¹¹¹ The 1893 encyclical: *Providentissimus Deus: On the Study of Holy Scripture*, "Natural Sciences," Boston, Pauline Books and Media, p. 24.

¹¹² The 1943 encyclical: *Divino Afflante Spiritu: The Promotion of Biblical Studies*, "The Importance of mode of writing," Boston, Pauline Books and Media, p. 21.

¹¹³ E.g., Nm 11:7; 1Sm 28:14; Ez 1:5; 8:2; Dn 8:15; 10:6; Jl 2:4; Am 5:8; Mt 16:3; 28:3; Mk 8:24; Lk 12:56; Ap 4:1; 15:2.

¹¹⁴ Pope Paul V in 1616; Pope Urban VIII in 1633; and Pope Alexander VII in 1664.

¹¹⁵ Thomas Aquinas wrote: "The Earth stands in relation to the heaven as the center of a circle to its circumference. But as one center may have many circumferences, so, though there is but one Earth, there may be many heavens" (*Summa Theologica*, "Treatise on the Work of the Six Days," Question 68, Article 4). By "many heavens" Thomas is referring to the three ways in which Scripture uses the word "heaven," e.g., the Earth's atmosphere; the starry cosmos; and the third heaven as God's domain above the firmament.

¹¹⁶ *Syllabus of Errors*

¹¹⁷ *Providentissimus Deus*

¹¹⁸ *Lamentabili Sani*

¹¹⁹ *Spiritus Paraclitus*

¹²⁰ *Divino Afflante Spiritu*

¹²¹ *Humani Generis*

¹²² *Professio Fidei*

¹²³ *Providentissimus Deus*

¹²⁴ *Denz.*, 783

¹²⁵ ¶¶ 81, 106.

¹²⁶ *Providentissimus Deus*

¹²⁷ Canon 279.1

¹²⁸ "midst" is from the Hebrew מִצַּד (chatsy), meaning "middle" or "half" (Ex 24:6; Js 1:12; 8:33; 12:2).

¹²⁹ If he is elevated at 3000, he can see for 64 nautical miles. See <http://www.boatsafe.com/tools/horizon.htm>.

¹³⁰ Dt 17:6; 19:15; Mt 18:16; 2Co 13:1.

¹³¹ Some orthodox Jews assert that the *Book of Jashar* appears in two ancient rabbinical works and an anonymous Jewish work of the 12th century A.D. The actual title of the book is סֵפֶר הַיָּשָׁר (sefer hayashar) translated more correctly as “Book of the Righteous.”

¹³² 2Sm 1:18, although in this account the demise of Israel is recorded.

¹³³ דָּמָם (*damam*) appears 30 times in the Old Testament (RSV), and is understood in the following ways: “silent” (Lv 10:3; Jb 29:21; 31:34; Ps 4:4; 30:12; 31:17; 62:5; 131:2; Jr 47:6; 48:2; Lm 2:10; Ez 24:17; Am 5:13); “cut off” (1Sm 2:9); “stand still” (1Sm 14:9) “still” (Ex 15:16; Jb 30:27; 37:7; Is 23:2; Jr 8:14); “ceasing” (Ps 35:15); “devastated” (Jr 25:37); “destroyed” (Jr 49:26; 51:6); “rest” (Lm 2:18).

¹³⁴ עָמַד (*amad*) appears 78 times in the Old Testament. Its preponderant meaning is translated by such words as: “stay,” “wait,” “remain,” “abide,” “establish,” etc., the most common being “stop” or “stay” (e.g., Gn 19:17; Ex 9:28; Lv 13:23; Dt 10:10; 1Sm 20:38; 30:9; 2Sm 17:17; 2Kg 4:6; 13:18; 15:20; Jr 4:6; Hs 13:13).

¹³⁵ Argued by David Palm in “Pope Leo XIII On Literal Interpretation and the Unanimous Consent of the Fathers,” at <http://www.galileowaswrong.com>.

¹³⁶ וְלֹא־אֵץ לָבוֹא כְּיוֹם תָּמִים (“and did not hasten to go for a whole day”) wherein the word in question (לָבוֹא) does not mean “to go down” but “to go.” It is a combination of the Hebrew prefix לָ (“to”) and the root word בָּוֹא (“go,” “come,” “bring”). As such, the passage is entirely literal, since the phrase in question is not speaking of the direction of the sun but only the movement of the sun.

¹³⁷ Ps 93:1 and 93:2 use the same Hebrew word for “established,” the word כֻּן (*kun*), which appears over a hundred times in the Old Testament in most of the Hebrew tenses. In vr. 1 it is utilized in the Niphal imperfect and in vr. 2 in the Niphal participle, which is the simplest of the passive tenses. Although *kun* includes the concept of an original founding date (e.g., “the building was established in 1955”), it also includes the concept of stability and longevity (e.g., “the rock of Gibraltar was established”). *Kun* also refers to rest or immobility (Jg 16:26: “and Samson said to the lad who held him by the hand, ‘Let me feel the pillars on which the house rests’”; 16:29: “And Samson grasped the two middle pillars upon which the house rested”; Er 3:3: “They set the altar in its place”).

¹³⁸ Is 66:1; Mt 5:35. In all of these passages the notion of “rest” for the Lord’s footstool is emphasized: Is 66:1: “Heaven is my throne and the earth is my footstool; what is the house which you would build for me, and what is the place of *my rest*?”; 1Ch 28:2: “I had it in my heart to build a *house of rest* for the ark of the covenant of the Lord, and for the footstool of our God”; Ps 132:7-8: “Let us go to his dwelling place; let us worship at his footstool! Arise, O Lord, and go to thy *resting place*, thou and the ark of thy might” (see also Ac 7:49). “Rest,” of course, refers to motionlessness, which is appropriate in the Earth’s case only if it is not moving through space.

¹³⁹ Hebrew: מָוֶה (*mōht*) appears 39 times in the Old Testament, 20 in the Psalms. The Qal form appears 13 times, 23 times in the Niphal, and one each in the Hiphil and Hithpael. It can refer to things as simple as slipping with the foot (Dt 32:35; Ps 17:5; 38:16-17) to moving the earth (Ps 82:5; Is 24:19). *Mōht*, in the physical sense, refers to the transition from a state of rest to a state of movement; in the figurative sense, from a state of stability to a state of instability. Of all the words in Hebrew referring to movement (e.g., חָפַץ, חָרַץ, נָדַד, נָוַע, פָּוַח, רָחַף, et al) מָוֶה (*mōht*) is used when any, even the slightest movement, is in view. Hence, it can refer to a shaking or vibration as well as a change of location.

¹⁴⁰ Hebrew: תֵּבֵל (*tebel*) appears 38 times in the Old Testament. It is often a poetic synonym of אֶרֶץ (*erets*) referring to the “earth” (e.g., 1Sm 2:8; Ps 33:8; 77:18; 90:2; Is 34:1; Lm 4:12), but in non-poetic contexts it sometimes has a larger focus than the physical world and may include the more abstract notions associated with existence, such as the totality of human consciousness (e.g., Is 24:4; 26:9). In the non-poetic passages that *tebel* is used without *erets*, *tebel* always refers to the earth or that which is inhabited by mankind (e.g., 2Sm 22:16; Is 13:11; 14:17, 21; 18:3), not to the universe at large.

¹⁴¹ Moreover, mutual orbiting around a common center of mass will also not satisfy the Psalmist since in that case neither the sun revolves around the Earth nor the Earth revolves around the sun.

¹⁴² The same emphasis on the “foundations” is noted in the following passages: Ps 18:7: “Then the earth reeled and rocked; the foundations also of the mountains trembled and quaked, because he was angry.” Similar rationale can be applied to Ps 46:2; 60:2; 68:8; 97:4; 99:1; 104:32.

¹⁴³ See *Galileo Was Wrong: The Church Was Right*, Volume 3, for more of Scripture’s teaching on geocentrism.

¹⁴⁴ From a speech given in Parma, Italy, March 15, 1990, partly reported in *Il Sabato*, March 31, 1990, pp. 80ff, and in the *Corriere della Sera*, March 30, 1990, and cited in *30 Days*, January 1993, p. 34).

¹⁴⁵ The best summary of the documentation on Vatican record keeping during the Inquisition is Francesco Beretta’s “The Documents of Galileo’s Trial: Recent Hypothesis and Historical Criticism” in *The Church and Galileo*, editor Ernan McMullin, pp. 191-212.

¹⁴⁶ Here we side with Blackwell who says that Santillana’s claim that “Bellarmine was semiconsciously frightened by a problem he had never faced: What if the Aristotelian substructure were to prove unreliable?” is “nonsense” (*Galileo, Bellarmine and the Bible*, p. 45).

¹⁴⁷ “The Church’s Ban on Copernicanism,” in *The Church and Galileo*, p. 177.

¹⁴⁸ Paul Feyerabend, *Farewell to Reason*, p. 253.

¹⁴⁹ As we noted earlier, a good example of this new teaching are the works of the late Fr. Raymond Brown, editor of the *New Jerome Biblical Commentary*, and one of the most influential Catholic theologians in the world. He writes: “Scriptural teaching is truth without error to the extent that it conforms to the salvific purpose of God” (*New Jerome Biblical Commentary*, p. 1169). The Catholic Church has never officially taught Brown’s view of biblical interpretation.

¹⁵⁰ *Ibid.*, ¶ 95.

¹⁵¹ For example, Raymond Brown writes: “If one correctly classifies a certain part of the Bible as fiction, one is not destroying the historicity of that section, for it never was history; one is simply recognizing the author’s intention in writing that section” (*The New Jerome Biblical Commentary*, p. 1152). Of course, what Brown hasn’t determined to anyone’s satisfaction is *how* one “correctly classifies a certain part of the Bible as fiction.” The only certain way this could be done is if the Bible itself states that a certain narrative is fictional (e.g., parables). All other attempts at determining fiction in the Bible are totally subjective and without the slightest proof. This issue becomes all the more egregious when exegetes such as Brown and his like-minded colleagues arbitrarily assign passages to the realm of fiction merely because they regard them as too fanciful for modern tastes, such as the story of Jonah and the whale, the flood of Noah’s day, or any number of narratives that exhibit a certain amount of miraculous intrusion. Of course, included in Brown’s wish for the “intent” of the biblical author to speak in non-literal ways are those passages that speak about the sun revolving around the Earth and the Earth being motionless in space.

¹⁵² *Ibid.*, ¶ 111.

¹⁵³ *Ibid.*, ¶ 113.

¹⁵⁴ *Ibid.*, ¶ 116.

¹⁵⁵ Cf. Jn 14:16-17; 15:26; 16:13. Even Protestant denominations who do not interpret Mt 26:26 in a literal manner are, in a reverse manner, following the “hierarchy of truths” principle, since they have determined, *a priori*, that such passages cannot be interpreted literally.

¹⁵⁶ *Galileo: For Copernicanism and the Church*, p. 511.

¹⁵⁷ Luke 16:10.

¹⁵⁸ As Galileo put in the mouth of Sagredo in his *Dialogo*: “In the conversations of these four days we have, then strong evidences in favor of the Copernican system, among which three have been shown to be very convincing – those taken from the stoppings and retrograde motion of the planets, and their approaches toward and recessions from the Earth; second, from the revolution of the Sun upon itself, and from what is to be observed in the sunspots; and third, from the ebbing and flowing of the ocean tides” (*Galileo’s Daughter*, p. 177).

¹⁵⁹ As noted by Richard Blackwell in *Galileo, Bellarmine and the Bible*, p. 22, fn. 26.

¹⁶⁰ As translated by Stillman Drake in *Discoveries and Opinions of Galileo*, 1957, p. 183.

¹⁶¹ *Ibid.*, p. 194. Annibale Fantoli shows here, however, that Galileo misconstrued the words of Augustine, having read them from Pereyra’s commentary on Genesis. Migne’s *Patrologia Latina* has *qui calumniari Libris nostrae salutis affectant* (“those who pretend to calumniate the Books of our salvation”) instead of Pereyra’s *sapientes huius mundi* (“the wise ones of the world”). In other words, some make it appear as if certain propositions of science do not contradict Scripture when, in fact, they do. See *Galileo: For Copernicanism and for the Church*, pp. 195-198.

¹⁶² *Ibid.*, p. 197.

¹⁶³ James 1:7-8: “For that person must not suppose that a double-minded man, unstable in all his ways, will receive anything from the Lord.”

¹⁶⁴ Stillman Drake, *Discoveries and Opinions of Galileo*, pp. 187-188

¹⁶⁵ NB: Unlike modern exegetes who believe that the Jews coming back from the Babylonian captivity wrote Genesis 1, Galileo believed that Moses wrote Genesis.

¹⁶⁶ See Galileo’s explanation of Joshua 10:10-14 in Chapter 12 of this book.

¹⁶⁷ As translated by Richard J. Blackwell in *Galileo, Bellarmine and the Bible*, pp. 195-198. Galileo’s concluding paragraph of the first section is left out because of its redundancy. The original Italian version appears in Favaro’s *Galileo E L’Inquisizione*, pp. 39-41.

¹⁶⁸ Antonio Favaro, *Galileo E L’Inquisizione*, pp. 33-34.

¹⁶⁹ Dorothy Stimson, *The Gradual Acceptance of the Copernican Theory of the Universe*, 1917, p. 58.

¹⁷⁰ *Le Opere di Galileo Galilei*, vol. 19, p. 321, translated by Fantoli.

¹⁷¹ *Le Opere di Galileo Galilei*, vol. 19, p. 278, translated by Fantoli.

¹⁷² Antonio Favaro, *Galileo E L’Inquisizione*, p. 63; *Le Opere di Galileo Galilei*, vol. 19, p. 323.

¹⁷³ Part of translation taken from de Santillana’s *The Crime of Galileo*, as cited by Fantoli in *Galileo: For Copernicanism and For the Church*, pp. 223-224.

¹⁷⁴ Antonio Favaro, *Galileo e l’Inquisizione*, pp. 82, 88.

¹⁷⁵ As stated in *Retrying Galileo*, pp. 158-159. The March 4, 1616 letter from Guicciardini to Cosimo II was not published until 1773 by Angelo Fabroni in *Lettere inedite di uomini illustri*, Florence, two volumes, 1773-1775.

¹⁷⁶ Finocchiaro finds that Riccardi “excused himself by saying that he has approved the publication of the Dialogue because he had received an order from the pope to do so; the pope denied it saying that these were just words, not to be trusted; but finally the Father Master produced a note by monsignor Ciampoli, secretary to the pope, in which it was

stated that His Holiness (in whose presence Ciampoli claimed to be writing) was ordering him to approve the book” (*Retrying Galileo*, p. 188).

¹⁷⁷ Koestler, *The Sleepwalkers*, pp. 488-490.

¹⁷⁸ Santillana, *The Crime of Galileo*, p. 267. Koestler notes: “Both the judges and the defendant knew that he was lying: both the judges and he knew that the threat of torture (*territio verbalis*) was merely a ritual formula, which would not be carried out; and that the hearing was a mere formality” (*The Sleepwalkers*, pp. 499-500).

¹⁷⁹ Reply to Ingoli, 1624, *Le Opere di Galileo Galilei*, vol. 6, total letter contained in pages 509-561, this portion translated by M. Finocchiaro in *The Galileo Affair*, p. 182. Ingoli was the secretary to the newly created office of Congregation for the Propagation of the Faith.

¹⁸⁰ *Le Opere di Galileo Galilei*, vol. 15, p. 25, as cited and translated in Richard Westfall’s *Essays on the Trial of Galileo*, p. 24. Fantoli, directing his remarks against McMullin’s thesis (1967, pp. 33-34), contends that “Galileo is aware that such scientific certainty in favor of Copernicanism does not yet exist. But the least that one can say is that it remains possible in the future. Therefore, the choice between Ptolemaic view and that of Copernicus is to be left open in expectation of future ‘proofs’” (*Galileo: For Copernicanism and for the Church*, p. 205). But it appears that in Galileo’s characteristic duplicity, he would say whatever he could get away with, depending on the audience to whom he was speaking. If his audience believed in Copernicanism, Galileo treated Copernicanism as a scientific fact. If his audience rejected Copernicanism, Galileo would often treat it as a hypothesis.

¹⁸¹ *The Crime of Galileo*, p. 277.

¹⁸² *Le Opere di Galileo Galilei*, Antonio Favaro, vol. 19, p. 403, as cited in Fantoli, p. 137.

¹⁸³ *Le Opere di Galileo Galilei*, vol. 19, pp. 403-404, as cited in Fantoli, p. 138.

¹⁸⁴ *Le Opere di Galileo Galilei*, vol. 14, p. 383, translated by Finocchiaro in *The Galileo Affair*, p. 229.

¹⁸⁵ *Le Opere di Galileo Galilei*, vol. 14, p. 384, translated by Finocchiaro in *The Galileo Affair*, p. 230.

¹⁸⁶ *Le Opere di Galileo Galilei*, vol. 14, p. 388, translated by Finocchiaro in *The Galileo Affair*, pp. 232-233.

¹⁸⁷ *Le Opere di Galileo Galilei*, vol. 14, pp. 388-389, translated by Finocchiaro in *The Galileo Affair*, pp. 235-236.

¹⁸⁸ *Le Opere di Galileo Galilei*, vol. 14, pp. 428-429, translated by Finocchiaro in *The Galileo Affair*, pp. 238-239.

¹⁸⁹ *Le Opere di Galileo Galilei*, vol. 15, p. 55-56, translated by Finocchiaro in *The Galileo Affair*, pp. 245-246.

¹⁹⁰ *Le Opere di Galileo Galilei*, vol. 15, p. 67-68, translated by Finocchiaro in *The Galileo Affair*, p. 247.

¹⁹¹ *Le Opere di Galileo Galilei*, vol. 15, p. 160, translated by Finocchiaro in *The Galileo Affair*, p. 255.

¹⁹² As noted by Finocchiaro in *Retrying Galileo*, p. 272.

¹⁹³ “falsa dottrina, da alcuni insegnata, ch’il sole sia centro del mondo et immobile, e che la terra si muova anco di moto diurno” (*Galileo E L’Inquisizione*, Favaro, p. 143).

¹⁹⁴ “rispondevi glosando detta Scrittura conforme al tuo senso” (*ibid.*).

¹⁹⁵ “si contengono varie proposizioni contro il vero senso et autorità della Sacra Scrittura” (*ibid.*).

¹⁹⁶ *Le Opere di Galileo Galilei*, vol. 5, pp. 335-336, translated by Finocchiaro, cited in *Galileo: For Copernicanism*, pp. 201-202.

¹⁹⁷ “di questa Suprema et Universale Inq.^{ne}” (*ibid.*).

¹⁹⁸ “Che il sole sia centro del mondo et immobile di moto locale, è proposizione assurda e falsa in filosofia, e formalmente heretica, per essere espressamente contraria alla Sacra Scrittura (*ibid.*).

¹⁹⁹ Jerome J. Langford, *Galileo, Science and the Church*, foreword by Stillman Drake, NY: Desclee Co., 1966, pp. 89-90, cited in Paula Haigh's private paper, *Galileo's Heresy*, p. 3.

²⁰⁰ "Che la terra non sia centro del mondo nè immobile, ma che si muova etiandio di moto diurno, è parimente propositione assurda e falsa nella filosofia, e considerate in teologia ad minus erronea in Fide" (*ibid.*).

²⁰¹ "fu decretata nella Sacra Congre.^{ne} tenuta avanti N. S. a' 25 di Febr.^o 1616" (*ibid.*). "N.S." is the abbreviation for "His Holiness" used each time it appears in the decree.

²⁰² "che dal Commissario del S. Off.^o ti dovesse esser fatto precetto di lasciar la detta dottrina, e che non potessi insegnarla ad altri nè difenderla nè trattarne" (*ibid.*).

²⁰³ "benignamente avisato et amonito, ti fu dal P. Commissario del S. Off.^o di quell tempo fatto precetto, con notaro e testimoni" (*ibid.* p. 144).

²⁰⁴ "in qualsivoglia modo" (*ibid.*).

²⁰⁵ "Et acciò che si togliesse affatto così perniciosa dottrina, e non andasse più oltre serpendo in grave pregiudizio della Cattolica verità" (*ibid.*).

²⁰⁶ "et essa dichiarata falsa et omninamente contraria alla Sacra et divina Scrittura" (*ibid.*).

²⁰⁷ "che con l'impressione di detto libro ogni giorno più prendeva piede e si disseminava la falsa opinione del moto della terra e stabilità del sole" (*ibid.*).

²⁰⁸ "avvenga che tu in detto libro con varii ragiri ti studii di persuadere che tu la lasci come indecisa et espressamente probabile" (*ibid.*).

²⁰⁹ "non potendo in niun modo esser probabile un'opinione dichiarata e difinita per contraria alla Scrittura divina" (*ibid.*).

²¹⁰ Bellarmine stated: "But I will not believe that there is such a demonstration, until it has been shown to me. To demonstrate that the assumption that the sun is located in the center and the earth in the heavens saves the appearances is not the same thing as to demonstrate that in truth the sun is located in the center and the earth in the heavens. The first demonstration, I believe, can be given; but I have the greatest doubts about the second. And in case of doubt one should not abandon the Sacred Scriptures as interpreted by the Holy Fathers."

²¹¹ Arthur Koestler, *The Sleepwalkers*, p. 605.

²¹² Gingerich posits this possible motivation: "*De revolutionibus* included observations of the Sun and Moon, of potential value to the Church, so it was inadvisable to ban the book outright. Nor could the heliocentrism simply be excised, for it was too firmly embedded in the text. The only path was to change a few places to make it patently obvious that the book was to be considered strictly hypothetical" (*The Book that Nobody Read*, p. 144).

²¹³ "la dichiarazione fatta da N. S.^e e pubblicata dalla Sacra Congre.^{ne} dell'Indice, nella quale si contiene che la dottrina del moto della terra e della stabilità del sole sia contraria alle Sacre Scritture, I però non si possa difendere nè tenere" (*ibid.*, p. 145).

²¹⁴ "hai non di meno ardito di trattarne, di difenderla e persuaderla probabile" (*ibid.*).

²¹⁵ "Diciamo, pronuntiamo, sententiamo e dichiaramo" (*ibid.*).

²¹⁶ "vehementemente sospetto d'heresia" (*ibid.*).

²¹⁷ "falsa e contraria alle Sacre e divine Scritture, ch'il sole sia centro della terra e che non si muova da oriente ad occidente, e che la terra si muova e non sia centro del mundo" (*ibid.*).

²¹⁸ "dopo esser stata dichiarata e diffinita per contraria alla Sacra Scrittura" (*ibid.*).

²¹⁹ "li sudetti errori et heresie" (*ibid.*, pp. 145-146).

²²⁰ As translated by Giorgio de Santillana in *The Crime of Galileo*, 1955, 1962, Time, Inc., pp. 332-336.

²²¹ *Ibid.*, pp. 337-338. Also recorded in the original Italian and Latin in Favaro's, *Galileo e l'Inquisizione*, pp. 76-85; 142-151.

²²² Dorothy Stimson, *The Gradual Acceptance of the Copernican Theory of the Universe*, p. 59. Finocchiaro adds: "The Church's unprecedented effort to promulgate Galileo's sentence

and abjuration is evidence of the attempt to generalize Galileo's case, to derive general prescriptions from his condemnation" (*Retrying Galileo*, p. 65).

²²³ Giorgio de Santillana, *The Crime of Galileo*, New York, Time Inc., 1962, p. 172.

²²⁴ Koestler, *The Sleepwalkers*, p. 487.

²²⁵ Finocchiaro has the best analysis of the possibility of such a sentiment in Urban VIII, but concludes that it may be just a myth because he has found no solid documentation for its existence (See *Retrying Galileo*, 1633-1992, pp. 185-188). Indeed, the running dialogue between September 1632 and June 1633, cited earlier, that Urban VIII had with the Duke of Tuscany's ambassador, Francesco Niccolini, clearly demonstrated that Urban's resolve was based solely on the biblical, theological and scientific inadequacies of Galileo's arguments.

²²⁶ *A Brief History of Time*, 1988, p. 42. Hawking says the same on page 47: "This could mean that we are at the center of a great region in the universe..."

²²⁷ *A Brief History of Time*, p. 42.

²²⁸ *Le Opere Di Galileo Galilei*, Antonio Favaro, reprinted from the 1890-1909 edition by Firenze, G. Barbèra – Editore, 1968, vol. 18, p. 311, translated by Fr. Brian Harrison.

²²⁹ The original Italian reads: "La falsità del sistema Copernicano non deve essere in conto alcuno messa in dubbio, e massime da noi Cattolici, havendo la inregrabile autorità delle Scritture Sacre, interpretate da I maestri sommi in teologia, il concorde assenso de' quali ci rende certi della stabilità della terra, posta nel centro, e della mobilità del sole intorno ad essa. Le congetture poi per le quali il Copernico et altri suoi seguaci hanno profferito il contrario si levono tutte con quell saldissimo argomento preso dalla onnipotenza di Iddio, la quale potendo fare in diversi, anzi in infiniti, modi quello che alla nostra opinione e osservazione par fatto in un tal particolare, non doviamo volere abbreviare la mano di Dio, e tenacemente sostenere quello in che possiamo essere ingannati....D'Arcetri, li 29 Marzo 1641. Scrivo l'alligata al R. P. Fulgenzio, dal quale è un pezzo che non ho nuove, e la raccomando a V. S. per il sicuro ricapito" (*Le Opere Di Galileo Galilei*, 1968, vol. 18, p. 316). A note added by the editor states: "Bibl. Naz. Fir. Banco Rari, Armadio 9, Cartella 5, 33. – Originale, di mano di Vincenzio Viviani." This means that the letter is stored in the rare archives of the National Library at Florence in the rare books department, in cabinet #9, folder #5, 33 and written in the original hand of Vincenzio Viviani, since Galileo was blind in both eyes in 1641. Viviani was Galileo's last pupil and first biographer. NB: Viviani had performed the first Foucault-type pendulum experiment in 1661. Galileo's letter to Rinuccini was translated into English by Fr. Brian Harrison upon request. Stillman Drake contains a similar translation in *Galileo At Work: His Scientific Biography*, Chicago, London, The University of Chicago Press, 1978, p. 417.

²³⁰ Even Maurice Finocchiaro, who is considered, and considers himself, one of the more thorough and detailed Galileo historians, fails to mention Galileo's conversion in any of his many books. In his latest book, *Retrying Galileo* (2005), Finocchiaro gives a comprehensive history of the Galileo affair from 1633 to 1992, concentrating in Chapter 3 on the years up to 1642, but makes no mention of Galileo's letter to Francesco Rinuccini concerning Pieroni's claim to discovering parallax, nor is Rinuccini's name included in the book's index. Rinuccini is only mentioned in passing on page 28. Finocchiaro is quite aware of Pieroni, however, since he mentions him on pages 67, 69: "...the efforts, activities and reports of Giovanni Pieroni. Born in Tuscany, he had studied with Galileo in Padua....In August 1635, Pieroni tried to convince Galileo to dedicate the *Two New Sciences* to Ladislaus..." On page 261, Finocchiaro makes reference to an apologetic article in *L'Osservatore Romano* of April 23, 1887, which stated: "You should believe Galileo himself, who, in the last years of his life, regretted having engaged in arbitrary interpretations of the Bible based on private judgment, which were especially dangerous at that time when this was the practice of the heretics in many parts of Europe." Rather than referring this to Galileo's 1642 conversion letter to Rinuccini, Finocchiaro says: "The last

reference is unclear, but it probably referred to the Renieri apocryphal letter..." See also page 156 where Favaro agrees that the Renieri letter is apocryphal.

²³¹ *Le Opere Di Galileo Galilei*, p. 316, footnote #2, translated by Fr. Brian Harrison.

²³² *Galileo At Work: His Scientific Biography*, pp. 418-419. Drake adds: "Thanks to Galileo's own telescopic discoveries that was certainly true, while that astronomical instruments could not establish stellar parallax was not only true in his time but remained so for two centuries afterward." Although this is true, Drake is basing his defense on the mistaken notion that authentic measurements of stellar parallax would have proved the case for heliocentrism. It would not, since, as we saw in Volume I, stellar parallax is easily explained from a geocentric model of the universe, and which fact honest scientists readily admit. Of note here also is that in 1669 Robert Hooke, and John Flamsteed a few years afterward, attempted to prove the motion of the Earth by stellar parallax, yet both failed (John Flamsteed, *Historia Coelestis Britannica*, 1725, ed., Allan Chapman, trans., Alison D. Johnson, National Maritime Museum Monograph, No. 52, 1982, pp. 179-180). Hooke writes about this experience in his book: *An Attempt to Prove the Motion of the Earth by Observation*, London, 1674. It was also in this book that Hooke presented the Inverse Square Law of the force of gravity, thirteen years before Newton published the same law in his famous *Principia*.

²³³ *Galileo: Watcher of the Skies*, p. 185, with Wootton's reference taken from Favaro's *Scampoli galileiani*, ii, 460-5.

²³⁴ *Ibid.*, p. 201f.

²³⁵ *Ibid.*, p. 208f.

²³⁶ *Ibid.*, p. 241.

²³⁷ *Ibid.*, p. 264.

²³⁸ *Ibid.*, p. 241.

²³⁹ *Ibid.*, pp. 264-265.

²⁴⁰ *Ibid.*, p. 253.

²⁴¹ *Ibid.*, pp. 257-258.

²⁴² *Ibid.*, p. 249.

²⁴³ *Ibid.*, p. 247. Wootton adds: "The letter to Dini is the only occasion in his correspondence in which Galileo gives expression to his esoteric religious teaching, and of course it comes with an urgent request: 'I beg you not to let it come into the hands of any person who would use the hard and sharp tooth of a beast...and so would completely mangel and tear it to pieces.'"

²⁴⁴ *Ibid.*, p. 248.

²⁴⁵ *Ibid.*, p. 265.

²⁴⁶ *Ibid.*, p. 247.

²⁴⁷ *Ibid.*, pp. 247-248.

²⁴⁸ *Ibid.*, p. 250.

²⁴⁹ *Ibid.*, p. 262.

²⁵⁰ Albert Einstein, *Ideas and Opinions*, 1954, 1984, p. 47.

²⁵¹ Originally said to Princeton University mathematics professor Oscar Veblen, May 1921, upon hearing that an experimental result by Dayton C. Miller would contradict his theory of gravitation. *The Expanded Quotable Einstein*, p. 241.

²⁵² To Valentine Bargmann. Quoted in Sayen's *Einstein in America*, p. 51, cited in *The Expanded Quotable Einstein*, p. 241.

²⁵³ Albert Einstein, *Ideas and Opinions*, p. 45.

²⁵⁴ *Orations*, II.

²⁵⁵ *Bulletin of the Tychonian Society*, December 1981, p. 17.

²⁵⁶ Finocchiaro notes: "...Agostino Ricchini, proposed to the pope...the possibility of lifting the prohibition of some books after proper correction" (*Retrying Galileo*, p. 138).

²⁵⁷ Finocchiaro, *ibid.*, p. 139, citing various sources, including *Le Opere di Galileo Galilei*, vol. 19, p. 419; Karl Gebler's *Galileo and the Roman Curia*, pp. 312-313; Pierre-Noël Mayaud, *La Condamnation des Livres Coperniciens et sa Révocation à la Lumière de Documents Inédits des Congrégations de l'Index et de l'Inquisition*, 1997, p. 197.

²⁵⁸ *Kosmotheoros, sive de Terris Coelestibus, Earumque Ornatu, Conjecturae*, 1698, Hagae Comitum, p. 14.

²⁵⁹ Jean D'Alembert, *Copernic*, in Diderot and D'Alembert 1751-1780, 4, pp. 173-174, as cited in *Retrying Galileo*, pp. 142-143. We note here that Lazzari's quote of D'Alembert is only a few years prior to the French Revolution of 1789, which precipitated an almost total rejection of Church authority in France. As Finocchiaro describes it: "The French Revolution affected the Galileo affair not only in the general and indirect ways...but also in a very specific and concrete way....In 1798 a French army occupied Rome, abolished the papal government, and established a Roman Republic. Pope Pius VI was deported to Florence, and the Inquisition palace in Rome was 'plundered to some extent by a French military rabble, and a part of the archives burned.' In 1800 a new pope, Pius VII, was elected in Venice, and in 1806 he was allowed to return to Rome with limited powers of government....In 1809, Napoleon again abolished papal government in Rome; the pope responded by excommunicating him. As a result, the pope was arrested and deported to France, and on 2 February 1810 everything in Rome pertaining to papal government was ordered moved to France. This situation did not change until 1814, when Napoleon freed the pope, restored the papal state, and began returning Church records and archives to Rome" (*Retrying Galileo*, pp. 175-176).

²⁶⁰ "That the center of the system of the world is immovable. This is acknowledged by all, although some contend that the Earth, others that the sun, is fixed in that center" (*Philosophiae Naturalis Principia Mathematica*, Book 3: The System of the World, Proposition X, Hypothesis I). The Latin original is: *Centrum systematis mundane quiescere. Hoc ab omnibus consensum est, dum aliqui terram, alii solem in centro systematis quiescere contendunt. Videamus quid inde sequatur.*"

²⁶¹ In Proposition XI, Theorema XI, Newton adds: "That the common center of gravity of the Earth, the sun, and all the planets, is immovable. For that center either is at rest or moves uniformly forwards in a right line; but if that center moved, the center of the world would move also, against the Hypothesis." Original Latin is: *Commune centrum gravitates terræ, solis & planetarum omnium quiescere. Nam centrum illud (per legum corol. iv) vel quiescent vel progrediatur uniformiter in directum. Sed centro illo semper progrediente centrum mundi quoque movebitur contra hypothesin.* See Chapters 3, 6, 9 in Volume I of *Galileo Was Wrong: The Church Was Right* for further study on Newton's laws and their relation to geocentrism.

²⁶² Fred Hoyle, *Nicolaus Copernicus*, 1973, p. 85.

²⁶³ Amitabha Ghosh, *Origin of Inertia: Extended Mach's Principle and Cosmological Consequences*, Montreal, Apeiron, 2000, p. 7.

²⁶⁴ All quotes from Lazzari's letter taken from Ugo Baldini's *Saggi sulla cultura della Compagnia di Gesù*, Padua: Cooperativa Editrice Libreria Università di Padova, 2000, pp. 489v-491v, as cited in *Retrying Galileo*, pp. 139-151.

²⁶⁵ "Ad quantum dicendum, quod angelus etsi caelum moveat" (*De potentia*, q. 6 a. 3 ad 5).

²⁶⁶ "Ad undecimum dicendum, quod licet motus locales inferiorum corporum sint a determinatis motoribus naturalibus..." (*De potentia*, q. 6 a. 3 ad 11).

²⁶⁷ As stated verbatim by Finocchiaro in *Retrying Galileo*, p. 154, with citation to Lalande's 1771 work, *Astronomie*, second edition, vol. 1, pp. 536-41, ¶¶ 1103-4. Also cited in Karl Gebler's *Galileo and the Roman Curia*, 1879, p. 313, and Walter Brandmüller's *Galilei e la Chiesa, ossia il diritto di errare*, 1992, p. 162.

²⁶⁸ *Isaac Newton and the Scientific Revolution*, an exhibition of books from Dr. and Mrs. R. Ted Steinbock, Moutain Goat Press, Louisville KT, 2006.

²⁶⁹ *Philosophiæ Naturalis Principia Mathematica*, Isacco Newtono, PP. Thomæ Le Seur & Francisci Jacquier, Genevæ, MDCCXXXIX [1739]. Original Latin: “DECLARATIO: Newtonus in hoc tertio Libro Telluris motæ hypothesim assumit. Autoris Propositiones aliter explicari non poterant, nisi eâdem quoquæ factâ hypothesi. Hinc alienam coacti sumus gerere personam. Cæterum latis a summis Pontificibus contra Telluris motum Decretis nos obsequi profitemur.” Above translation taken from Rev. William W. Roberts in *The Pontifical Decrees Against the Doctrine of the Earth’s Movement*, p. 53.

²⁷⁰ As cited in Finocchiaro’s *Retrying Galileo*, p. 143, with an endnote identifying them as: “The Minim Fathers François Jacquier (professor of experimental physics at the University of Rome from 1746) and Thomas Le Seur (professor of applied mathematics from 1749)...They were the coeditors of the famous edition of and commentary to Newton’s *Principia* in 1739-1742” (*ibid.*, p. 394), yet neither Finocchiaro nor his alternate source, Baldini, mention that Jacquier and Le Seur disavowed themselves from Newton’s heliocentrism and gave their full allegiance to the pontiffs who condemned Copernicanism.

²⁷¹ All quotes taken from I. Bernard Cohen’s *Revolution in Science*, p. 439.

²⁷² *Galileo: Watcher of the Skies*, Yale University Press, 2010, p. 261.

²⁷³ *Catherine of Siena: The Dialogue*, “The Mystic Body of Holy Church,” #110. Dictated to her secretaries in 1370 while in a state of ecstasy. Originally published in 1907 by Kegan Paul, et al., Ltd. London.

²⁷⁴ G. J. Whitrow, *The Structure and Evolution of the Universe*, 1949, 1959, p. 79.

²⁷⁵ Mayaud defines the position: “The function of the Master of the Sacred Palace traces back to St. Dominic. At first it consisted in instructing the court and attendants of the pope and of the cardinals in the Christian truths. Then, with the Bull “Licet ubilibet ad seminandum verbum dominicum” of 1456, the Master of the Sacred Palace was in charge of the preliminary censorship of sermons given in the pontifical chapel during Advent and Lent, in order to avoid any error of the lector in the presence of the pope, an error which afterwards might be attributed to the Holy See. In addition to other varied tasks, to which he is assigned, he is in some way the theologian of the pope, an office which continues to the present day.” (Pierre-Noël Mayaud, SJ, *The Condemnation of Copernican Books and Its Repeal*, 1997, Introduction).

²⁷⁶ As noted by Mayaud, *Condemnation*, p. 236.

²⁷⁷ Giuseppe Calandrelli (1749 – 1827) served as the astronomer of the former Jesuit Collegio Romano during the period of the suppression of the Society of Jesus. He was a preeminent astronomer in Rome, engaging in work of traditional positional astronomy, including observations of comets and eclipses and accurate measurements of stellar positions and motions.

²⁷⁸ As noted by Mayaud, *Condemnation*, p. 249. Settele writes in his diary on January 3, 1820: “I have asked P. Olivieri, Professor at the ‘Sapienza,’ Dominican, and attached to the Inquisition, if I could openly affirm the movement of the earth, and he told me, yes.” Settele’s diary dates of 1810 through 1836 was collected and published by Paolo Maffei in 1987 as *Giuseppe Settele, il suo Diario e la questione galileiana*, Foligno: Edizioni dell’Arquata.

²⁷⁹ As cited by Mayaud, *Condemnation* p. 251, from Settele’s diary, no date given.

²⁸⁰ *Ibid.*, from Settele’s diary of August 12, 1820.

²⁸¹ From Settele’s diary, date August 8, 1820, per Mayaud, p. 249.

²⁸² Anfossi’s *Motivos* are recorded in Brandmüller’s *Copernico Galilei E La Chiesa*, pp. 310ff. One interesting detail is recounted by Mayaud (p. 239) regarding the *Acta* notes of the Settele affair. After describing the conflict between Anfossi and Olivieri, the author of the *Acta* mentions a Father Soldati, Secretary of the Holy Congregation from 1800 to 1807,

who says that subsequent editions of the *Index* (1768, 1770, 1786, 1806, 1819) should omit the 1758 decree of Benedict XIV concerning the prohibition of all books teaching the immobility of the sun and the movement of the earth, but the author says these Indices are already absent Benedict XIV's decree. This may indicate either sloppiness in record keeping or ambivalence about Benedict XIV's *Index*.

²⁸³ Mayaud, *Condemnation*, p. 243. Original Latin: "Et mens est, ut insinuetur R[everendissi]mo P[at]ri Magistro Sacri Palatii Apostolici ne impediatur Editionem *Elementorum* Canonici Iosephi Settele; Canonico autem Settele insinuetur ut ipso in opera nonnulla inserat, quibus ostendat sententiam Copernicanam, ut modo defenditur, non amplius iis difficultatibus esse obnoxiam, quibus, ante posteriora observata, antiquis temporibus implicabatur." Brandmüller, *Copernico Galilei E La Chiesa*, pp. 297-298.

²⁸⁴ As Mayaud notes: "Anfossi explains this longer in August 1820 in the 'Motivi' (Brandmüller, *Copernico Galilei E La Chiesa*, pp. 310-317), which he presents to the pope after the first decrees were promulgated against him by the Holy Office. He now alludes not only to the decrees of the Congregation of the Index of 1616 and 1620 or to those concerning Galilei (the 'precetto', imposed on him, is now also mentioned), while insisting on the fact that the decree of 1620 does allow to speak of the Copernican System only under a hypothetic title...but also and especially with the sense of the suppression of the 'Libri omnes docentes ...' in the 'Index' of 1758. Particularly, after having evoked the decree of April 16, 1757, quod, habito verbo cum Sanctissimo, omittatur Decretum..." (pp. 255-256).

²⁸⁵ Annibale Fantoli, *The Case of Galileo: A Closed Question?* 2012, p. 240. Fantoli calls it: "the 'remarkable' way out of the centuries-old impasse excogitated by the commissioner of the Holy Office [Olivieri] in 1820" (p. 245).

²⁸⁶ (Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, pp. 317-318).

²⁸⁷ Antonio Favaro, *Galileo e l'Inquisizione*, ¶30.

²⁸⁸ Mayaud, p. 253, from Settele's diary entry of June 15, 1822, p. 411.

²⁸⁹ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 318.

²⁹⁰ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 319.

²⁹¹ *Ibid.*, ¶49.

²⁹² *Ibid.*, ¶53.

²⁹³ *Ibid.*, ¶¶55, 66

²⁹⁴ *Ibid.*, ¶49.

²⁹⁵ Brandmüller and Greipl's note #430 here states: "in the margin of Olivieri's manuscript."

²⁹⁶ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, pp. 320-321. Olivieri is mistaken on Kepler, however, since he was a Lutheran.

²⁹⁷ According to the 1616 and 1633 decrees, a non-central, moving Earth, similar to a non-moving sun, is judged as "absurd" and "false philosophically." The word "absurd" is employed because of the simple logic involved. If the sun moves around the Earth, then logically the Earth cannot move around the sun. It is a simple matter of choosing the right system. If A is right, it would be absurd to adopt B. "False philosophically" refers to the fact that the Pythagorean school of philosophy had adopted heliocentrism in opposition to the philosophical school of Aristotle. In medieval times, "philosophy" was a much more general term than its usage today. Lastly, the change from "formally heretical" with regard to the movement of the sun, to "at least erroneous in faith" with regard to movement of the Earth seems a bit inconsistent but there is a reason for it. First, as noted earlier, the Church admitted that certain Scriptures might possibly be interpreted as referring to the stability of the Earth as opposed to its being immobile in space. As such, it would not be formally heretical to say that Psalm 104, for example, was speaking about Earth's longevity in time rather than its position in space. But since it was certain that the sun revolved around the

Earth, it would still be “at least erroneous in faith” for one to claim that the Earth moved since obviously only one body can be revolving around the other. Second, normally ecclesiastical censures will be issued at three distinct levels of severity: (a) heresy; (b) erroneous in faith; (c) rashness. The difference between (a) and (b) in the case of Galileo is that there was some doubt about whether Galileo actually held, at least in the absolute sense, to the concepts that he put in his *Dialogo* since he sometimes gave the impression they were hypothetical. As such, Galileo is convicted for being “vehemently suspected of heresy” as opposed to being in actual heresy.

²⁹⁸ Olivieri’s November 1820 Summation, “Ristretto di Ragione, e di Fatto,” ¶42, as cited by Finocchiaro in *Retrying Galileo*, p. 209. Olivieri does much the same in ¶46, accusing Anfossi of not knowing what the 1616-1633 Sacred Congregations meant by the Earth’s mobility.

²⁹⁹ *Retrying Galileo*, p. 209.

³⁰⁰ *Summa Theologica*, Part 1, Question 70, Article 1, Reply to Objection 3. The second reference to Moses’ accommodation to the ignorance of the people noted above (Question 68, Article 3) shows us what Aquinas’ intent really was. He writes: “Moses, then, while he expressly mentions water and earth, makes no express mention of air by name, to avoid setting before ignorant persons something beyond their knowledge. In order, however, to express the truth to those capable of understanding it, he implies in the words: ‘Darkness was upon the face of the deep,’ the existence of air as attendant, so to say, upon the water. For it may be understood from these words that over the face of the water a transparent body was extended, the subject of light and darkness, which, in fact, is the air.”

³⁰¹ *Summation* ¶45.

³⁰² *Ibid.*, ¶47.

³⁰³ Maurice Finocchiaro, *Retrying Galileo*, pp. 220-221.

³⁰⁴ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 283, §103.

³⁰⁵ “Nihil igitur obstat, quin loca illa (della Sacra Scrittura) in sensu naturali Ecclesia intelligat, intelligenda esse declaret, quamdiu nulla demonstratione contrarium evincitur.”

³⁰⁶ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 283.

³⁰⁷ Paul Feyerabend, *Against Method*, pp. 65, 68, the quote coming from Galileo’s *Dialogo*, p. 416.

³⁰⁸ Mayaud, p. 263.

³⁰⁹ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 323.

³¹⁰ In 1584, Kepler attended the Protestant seminary at Adelberg. In 1589 he began studies at the Protestant university of Tübingen. In 1594, he became professor of mathematics at the Protestant seminary in Graz, where he remained until 1600 until the Counter-Reformation forced all Protestants to leave the province.

³¹¹ Mayaud, *Condemnation*, p. 258, n. 46.

³¹² *Philosophiæ Naturalis Principia Mathematica*, Isacco Newtono, PP. Thomæ Le Seur & Francisci Jacquier, Genevæ, MDCCXXXIX [1739]. Original Latin: “DECLARATIO: Newtonus in hoc tertio Libro Telluris motæ hypothesim assumit. Autoris Propositiones aliter explicari non poterant, nisi eadem quoque factâ hypothesi. Hinc alienam coacti sumus gerere personam. Cæterum latis a summis Pontificibus contra Telluris motum Decretis nos obsequi profitemur.” Above translation taken from Rev. William W. Roberts in *The Pontifical Decrees Against the Doctrine of the Earth’s Movement*, p. 53.

³¹³ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 323.

³¹⁴ Olivieri writes: “Considering all this, it seems to me that one should now more than ever suggest to remove from the *Index* the three named books (Copernicus, Zuniga and Foscarini) and at the same time the citation of these decrees” (*ibid.*, p. 426) Apparently, Galileo would need to be left on because earlier Grandi argued that the 1616 and 1633 decrees were directed against Galileo and no one else.

³¹⁵ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 324.

³¹⁶ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, pp. 440-441.

³¹⁷ Mayaud here refers to page 245 of his book that records the official Sept. 11, 1822 statement signed by Turiozzi allowing for Settele to receive his imprimatur, but also stating at the end that the books of Copernicus, Foscarini and Zuniga were to be removed from the Index, yet with a note from Turiozzi saying that the removal was suspended. It is as follows: “(This part of the decree has been suspended, and one should observe afterwards how these works in question are re-examined.) Finally the works of Nicolas Copernicus “De Revolutionibus Orbium Coelestium Lib.VI.” of Paul Antoine Foscarini “Lettera sopra l’opinione de’Pitagorici, e del Copernico della mobilita della terra, e stabilita del sole,” of Didacus Astunica “Commentaria in Job” should be omitted in the new edition of the Index of Forbidden Books, unless something else opposes it, according to the form and execution of the decree of the Sacred Congregation of the Index of 1758.”

³¹⁸ Mayaud, pp. 265-266.

³¹⁹ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, pp. 441-462.

³²⁰ “pour y chercher cet éventuel ‘pour quelque autre raison’” (p. 266).

³²¹ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, pp. 479-480.

³²² Mayaud, pp. 268-269.

³²³ Brandmüller and Greipl, *Copernico Galilei E La Chiesa*, p. 481.

³²⁴ Mayaud, *Condemnation*, p. 240. The original Latin Mayaud translated is “ultimum praesertim ob ejusdem Pontificis oscitantiam et obstupescentiam.” Mayaud also mentions, “However we should consider how Pope Pius VII himself let it go and did not immediately impose his authority. In this same paragraph, had not Turiozzi spoken of ‘too much kindness of the Pope?’” (*ibid.*, p. 250).

³²⁵ Mayaud, *Condemnation*, p. 251, with references from Settele’s diary concerning the “weakness” entered in April 12, August 10 and October 13, 1822; and concerning “does not want to fight” entered June 6, 1820.

³²⁶ *Ibid.*, p. 252, taken from Settele’s diary entry of January 20, 1822.

³²⁷ *Condemnation*, p. 253.

³²⁸ As Finocchiaro puts it: “But he [Lalande] was told by the head of the Congregation of the Index that Galileo’s case was different because it involved a trial, and so one would first have to revoke the sentence pronounced against him...” (*Retrying Galileo*, p. 154).

³²⁹ *Retrying Galileo*, p. 195.

³³⁰ Antonio Favaro, *Galileo e l’Inquisizione*, pp. 30-31.

³³¹ From Olivieri’s November 1820 Summation, titled, “Ristretto di Ragione, e di Fatto,” ¶29, as cited by Finocchiaro in *Retrying Galileo*, p. 205.

³³² After giving the history of the evidence submitted by both Settele and Olivieri to Pius VII in favor of Settele; and the evidence against Settele submitted by Anfossi and the Vatican majordomo, the best Finocchiaro can conclude is: “On December 14 [1820], the Inquisition cardinals agreed that the imprimatur would be given by the vicar apostolic, and the pope approved the decision” (*Retrying Galileo*, p. 197, citing “Brandmüller and Greipl 1992, pp. 93-93, 396” as his source but without a direct quote from Pius VII), and “On September 25 [1822], Pope Pius VII ratified the Inquisition’s decision to permit works teaching the earth’s motion” (*Retrying Galileo*, pp. 197-198, citing Favaro’s, *Le Opere di Galileo Galilei*, vol. 19, p. 421 and Brandmüller and Greipl 1992, p. 429, but again without a direct quote from Pius VII from either source). Fantoli states: “This decree [of Sept. 11, 1822] was approved two weeks later by Pope Pius VII” (*Galileo: For Copernicanism and for the Church*, p. 499). Favaro’s citation of the “approval” has one short sentence signed not by Pius VII but by the Assessor, monsignor F. Turiozzi: “Sanctissimus Dominus Noster Pius divina providential Papa Septimus, in solita audientia mihi infrascripto Assessori Sancti Officii impertita, supradictum Decretum approbavit, et exequi mandavit. F. Turiozzi

Ass.,” which translates: “During the accustomed audience granted to me [F. Turiozzi], the undersigned Assessor of the Holy Office, Our Most Holy Lord Pius the Seventh, by divine Providence pope, approved the above decree and ordered it to be executed” (*Galileo E L’Inquisizione*, p. 31; Mayaud, *Condemnation*, pp. 245-246). There is no document, however, that contains an exact quote of Pius VII’s approval, nor has a signature of Pius VII been produced for decisions that are said to be “ratified” by him.

³³³ Brandmüller and Greipl, p. 481. “The Lord consultors were in the undertaking for the purpose of replying to those things which differed, and the same layout was distributed to the Lord Consultors, with observations being made by the Reverend Fathers Cappellari and Garofalo.”

³³⁴ *Retrying Galileo*, p. 198, as cited from Settele’s diary, *op. cit.*, p. 421.

³³⁵ Original Latin: “DECLARATIO....Cæterum latis a summis Pontificibus contra Telluris motum Decretis nos obsequi profitemur.” Above translation taken from Rev. William W. Roberts in *The Pontifical Decrees Against the Doctrine of the Earth’s Movement*, p. 53.

³³⁶ *Retrying Galileo*, p. 198.

³³⁷ Mayaud, *Condemnation*, pp. 271-272.

³³⁸ “Une hypothèse se présente aussitôt: Grégoire XVI, alors qu’il était Consultant du Saint-Office en 1823, percevait la situation exactement comme Olivieri....les remarques plaisantes de Cappellari, avec son ‘laissez tourner la terre,’ sont un indice de son accord complet avec Olivieri” (*ibid.*, p. 273).

³³⁹ Brandmüller and Greipl, p. 129. Italian: “Cappellari, l’esperto di un tempo e ora papa Gregorio XVI, poteva per esempio chiedere sorridendo al professor Settele in occasione di una audienza nel 1833: ...gira la testa o gira la terra? ma lasciate che giri la terra, basta, che non girino le teste.”

³⁴⁰ Headed with: “Maurizio Olivieri on the End of the Copernicus-Galilei Case: Extracted from a manuscript titled ‘Conduct of the Holy See toward Copernicus and Galilei,’ without place, without date, without pagination (Rome, after 1835), Vol. II (autograph of Olivieri).”

³⁴¹ “que le pontificat de Grégoire XVI (1830-1846) sera profondément marqué par une opposition aux mouvements libéraux qui naissent alors dans toute l’Europe à la suite de la révolution de juillet 1830 en France, et que nous n’avons aucun témoignage direct d’une ouverture de sa part à ‘une saine mais modern philosophie’...”

³⁴² Brandmüller and Greipl, p. 129. Italian: “Cappellari, l’esperto di un tempo e ora papa Gregorio XVI, poteva per esempio chiedere sorridendo al professor Settele in occasione di una audienza nel 1833: ...gira la testa o gira la terra? ma lasciate che giri la terra, basta, che non girino le teste.”

³⁴³ Kitty Ferguson, *Measuring the Universe*, pp. 34-35. Even as late as 1941, the president of the Pontifical Academy of Sciences, Agostino Gemelli, gave a speech to the members stating: “...although Galileo did not provide a decisive demonstration of Copernicanism, neither did Newton, Bradley, or Foucault” (cited by Finocchiaro in *Retrying Galileo*, p. 278).

³⁴⁴ As stated verbatim by Finocchiaro in *Retrying Galileo*, p. 154, with citation to Lalande’s 1764 work, *Astronomie*, second edition, vol. 1, pp. 536-41, ¶¶ 1103-4. Also cited in Karl Gebler’s *Galileo and the Roman Curia*, 1879, p. 313, and Walter Brandmüller’s *Galilei e la Chiesa, ossia il diritto di errare*, 1992, p. 162.

³⁴⁵ Mayaud, believing that heliocentrism is correct, takes a different view, stating. “The complete removal in 1835 which was the only logical achievement of that in 1757, has a totally different significance, and it had to be done, because it explained expressly, that the decree of 1616, which had led to those of 1619 and 1634, was definitely revoked and annulled. The Church acknowledged therefore, that she had thus committed an error and by it she rehabilitated already those whom she had condemned” (*The Condemnation of Copernican Books and Its Repeal*, Rome 1997, Introduction, translated from the French).

³⁴⁶ Recently, Pope Benedict XVI demonstrated the legal power that previous canonical decisions possess when he said this about the 1962 missal for the Mass: “As for the use of the 1962 missal as a *forma extraordinaria* of the liturgy of the Mass, I would like to draw attention to the fact that this missal was never juridically abrogated and, consequently, in principle, was always permitted. Article 1: ...It is, therefore, permissible to celebrate the Sacrifice of the Mass following the typical edition of the Roman Missal promulgated by Bl. John XXIII in 1962 and never abrogated, as an extraordinary form of the Liturgy of the Church” (Motu Proprio: *Summorum pontificum*, July 7, 2007).

³⁴⁷ Quoted from Cardinal Casaroli, as translated by M. Segre in “Light on the Galileo Case?” in *Isis* 88, pp. 500-501, as cited in *Retrying Galileo*, p. 344.

³⁴⁸ “Relativity – The Special and General Theory,” cited in Stephen Hawking’s, *A Stubbornly Persistent Illusion*, 2007, p. 169.

³⁴⁹ Lorentz’s 1886 paper, “On the Influence of the Earth’s Motion of Luminiferous Phenomena,” in A. Miller’s *Albert Einstein’s Special Theory of Relativity*, p. 20.

³⁵⁰ From Poincaré’s report *La science et l’hypothèse* (“Science and Hypothesis”) 1901, 1968, p. 182. L. Kostro’s, *Einstein and the Ether*, 2000, p. 30.

³⁵¹ Bernard Jaffe, *Michelson and the Speed of Light*, 1960, p. 76.

³⁵² Lincoln Barnett, *The Universe and Dr. Einstein*, 2nd rev. edition, 1957, p. 73.

³⁵³ Julian Barbour, *Absolute or Relative Motion*, Cambridge University Press, 1989, p. 226.

³⁵⁴ I. Bernard Cohen, *Birth of a New Physics*, revised and updated, 1985, p. 78.

³⁵⁵ *The Grand Design*, Stephen Hawking and Leonard Mlodinow, NY, Bantam, 2010, p. 41.

³⁵⁶ Quoted from Dennis W. Sciama’s, *The Unity of the Universe*, 1961, pp. 102-103.

³⁵⁷ As even Fantoli admits: “...in his encyclical *Providentissimus Deus*, Leo XIII dealt with the problem of the relationship between sacred scripture and science....A reference, at least, to the Galilean problem...would have been more than proper. Instead the pope limited himself to an allusion, formulated in extremely cautious terms, to errors committed by individual Church Fathers and, in following epochs, by their interpreters” (*The Case of Galileo: A Closed Question?* 2012, p. 228).

³⁵⁸ *Spiritus Paraclitus*, September 15, 1920, Denzinger ¶ 2186-2188.

³⁵⁹ *The Pontifical Decrees Against the Doctrine of the Earth’s Movement and the Ultramontane Defence of Them*, Rev. William W. Roberts, London, Parker and Co., 1885, pp. 4-5.

³⁶⁰ Roberts argues that well known Catholic canonists, such as Bouix in his book *Tractatus de Curia Romana* (part 3, ch. 7, p. 471), teaches that congregational decrees may be infallible if they are specifically confirmed by the pope. Roberts writes: “On turning to M. Bouix’s *Tractatus*...we learn that there are three kinds of Congregational decrees: 1. Those which the pope puts forth in his own name after consulting a Congregation. 2. Those which a Congregation puts forth in its own name with the pope’s confirmation, or express order to publish... 3. Those which a Congregation with the pope’s sanction puts forth in its own name, but without the pope’s confirmation or express order to publish. Decrees of the first and second class, we are told, are certainly *ex cathedra*, and to be received with unqualified assent under pain of mortal sin. According to Zaccaria – a very great authority – even decrees of the last class are not fallible, in the sense that they can ever condemn as erroneous a doctrine which is not so” (*The Pontifical Decrees Against the Doctrine of the Earth’s Movement*, p. 60).

³⁶¹ *Dublin Review*, Vol. V. New Series, July–October, MDCCCLXV, Dublin: James Duffy & W. B. Kelly, 1865, pp. 385-386. The author adds a quote from Catholic theologian Zaccaria, stating: “...it is Zaccaria’s doctrine, that decrees of a Pontifical Congregation, which are published and promulgated by the Pope’s express command, are, in fact, his instructions *ex cathedra* and infallible. This doctrine, it seems to us, has received very great

support from Pius IX's language in speaking of Günther's condemnation. 'Which decree (of the Index), he says, 'sanctioned by our authority, and published by our command, ought plainly to suffice, in order, that the whole question be judged as finally decided (penitus dirempta); and that all who boast of the Catholic profession should clearly and distinctly understand that complete obedience must be paid to it, and that the doctrine contained in Günther's books may not be considered sound (sinceram haberi non posse)'" (*ibid.*, p. 387).

³⁶² Dorothy Stimson, *The Gradual Acceptance of the Copernican Theory of the Universe*, pp. 67-68.

³⁶³ *Retrying Galileo*, pp. 26-28.

³⁶⁴ *Ibid.*, p. 27.

³⁶⁵ René Descartes, *Oeuvres*, 1897-1913, eds. C. Adam and P. Tannery, Paris, vol. 1, p 270. Also in Favaro's *Le Opere di Galileo Galilei*, vol. 15, p. 340, as cited by Finocchiaro in *Retrying Galileo*, pp. 43-44.

³⁶⁶ Descartes, *ibid.*, p. 280f, Favaro, *ibid.*, vol. 16, p. 56.

³⁶⁷ Descartes, *ibid.*, p. 284f, Favaro, *ibid.*, vol. 16, pp. 88-89. Descartes' "demonstrations" of the earth's movement could not have been much better, since he believed Galileo's "reasons proving the earth's motion are very good; but it seems to me that he does not present them as one must in order to be persuasive" (*Le Opere di Galileo Galilei*, vol. 15, p. 125). As most scientists have admitted, Galileo's proofs for a moving earth were entirely fallacious. Finocchiaro adds: "A few years after the *Discourse*, Descartes even felt comfortable enough to discuss the condemned geokinetic thesis. In 1644, he published in Latin the *Principles of Philosophy*....He devised his own system, which was a modification of the Copernican one....Of course, to comply with the ecclesiastical censures, Descartes wanted to engage merely in a hypothetical discussion and not appear to hold or defend the geokinetic thesis. He thought he could accomplish this aim in two ways. First, Descartes devised a version of the doctrine of the relativity of motion and applied it to the earth's motion in such a way as to be able to say that the earth is both stationary and in motion!" (*Retrying Galileo*, p. 50).

³⁶⁸ John S. Daly, "The Theological Status of Heliocentrism," October 1997, unpublished and privately circulated paper, p. 12.

³⁶⁹ 1983 Code of Canon Law states: "No doctrine is understood as defined infallibly unless this is manifestly evident" (Canon 749.3). The 1917 Code of Canon Law put it this way: "Nothing is understood to be dogmatically declared or defined unless this shall be manifestly certain" (Canon 1323).

³⁷⁰ *Humani Generis* states: "Nor must it be thought that the things contained in Encyclical Letters do not of themselves require assent on the plea that in them the Pontiffs do not exercise the supreme power of their Magisterium. For these things are taught with the ordinary Magisterium, about which it is also true to say, 'He who hears you, hears me.' [Lk 10. 16]...If the Supreme Pontiffs, in their acts expressly pass judgment on a matter debated until then, it is obvious to all that the matter, according to the mind and will of the same Pontiffs, cannot be considered any longer a question open for discussion among theologians."

³⁷¹ Canon 752: "Although not an assent of faith, a religious submission of the intellect and will must be given to a doctrine which the Supreme Pontiff or the college of bishops declares concerning faith or morals when they exercise the authentic magisterium, even if they do not intend to proclaim it by definitive act; therefore, the Christian faithful are to take care to avoid those things which do not agree with it."

³⁷² Denzinger ¶1792.

³⁷³ Denzinger ¶1795.

³⁷⁴ Denzinger ¶1797.

³⁷⁵ Denzinger ¶1798.

³⁷⁶ Some Bibles during this precise time in history (1611-1633) translate 1 Timothy 6:20 as “science falsely so called” (KJV), which shows a common understanding in the early 1600s that “science” was often equated with “knowledge.”

³⁷⁷ Denzinger ¶1799.

³⁷⁸ *Summa Theologica*, I, Ques. 1, Art. 6, ad. 2.

³⁷⁹ John S. Daly, “The Theological Status of Heliocentrism,” October 1997, unpublished, privately circulated paper, p. 14.

³⁸⁰ Annibale Fantoli, *Galileo: For Copernicanism and for the Church*, p. 505.

³⁸¹ *Ibid.*

³⁸² Cited in Alice Calaprice’s, *The Expanded Quotable Einstein*, p. 315.

³⁸³ Einstein’s words to Leopold Infeld, *Quest – An Autobiography*, p. 258.

³⁸⁴ Letter to Carl Seelig, as cited in *Albert Einstein—A Documentary Bibliography*, p. 67, cited in Max Jammer’s *Einstein and Religion*, pp. 40-41.

³⁸⁵ Albert Einstein, 1916 obituary for E. Mach, *Physikalische Zeitschrift* 17, 101

³⁸⁶ Stacy McGaugh, Department of Astronomy, University of Maryland (<http://www.astro.umd.edu/~ssm/mond/stakes.html>)

³⁸⁷ Attributed, not verified.

³⁸⁸ Quoted by W. Kaufmann in *Existentialism from Dostoevsky to Sartre*, p. 33.

³⁸⁹ The Pontifical Academy of Science has close to one hundred members. Candidates for membership are chosen by the Academy and are appointed for life by the pope. The Director of the Vatican Observatory, the Director of the Astrophysical Laboratory of the Vatican Observatory, the Prefect of the Vatican Library and the Prefect of the Secret Archives of the Vatican, are all members *pro tempore* and have the same rights and perform the same functions as the Pontifical Academicians. The scientific disciplines of the members are in nine fields: physics and related disciplines, astronomy, chemistry, the earth and environmental sciences, mathematics, the applied sciences, the philosophy and history of sciences, and the life sciences (*i.e.*, botany, agronomy, zoology, genetics, molecular biology, biochemistry, the neurosciences, and surgery). About a third of the members have won a Nobel Prize. Being a “pontifical” assemblage of scientists one would assume that the members would either be Christians or have some spiritual allegiance to the Catholic Church and/or the pope. The fact is, however, many of the PAS members profess no allegiance to Christianity, and many are avowed agnostics or atheists (*e.g.*, Stephen Hawking, Paul Davies). All of them have accepted the Darwinian and Copernican hypotheses and have made it clear they do not entertain any other views. Consequently, any scientific theory that depends on a significant degree of divine intrusion is more or less dismissed as either incredible or unscientific. Since the PAS has the most influence on the scientific information that is given to the pope or his papal commissions, it would be safe to assume that there is a pro-Copernican and pro-Darwinian bias to all the information it releases.

³⁹⁰ Ernan McMullin, editor of *The Church and Galileo*, Univ. of Notre Dame Press, 2005, p. 2. McMullin adds: “the final report delivered to the Pontifical Academy of Sciences and the speech prepared for the pope for delivery on the same occasion were plainly inadequate from the historical standpoint,” and in closing: “There has admittedly been disappointment, grave disappointment indeed...But it is in the spirit of that original invitation that this collection of essays was first conceived and is now presented” (p. 7). McMullin, of course, believes that heliocentrism has been scientifically proven and this is the reason for his “grave disappointment” in John Paul II’s speech. He and his colleagues appear to want their pound of flesh from the Vatican and will accept nothing less than an admission of error in the Galileo affair. He hints at this goal by remarking on Monsignor Pietro Parente’s comment (the co-president of the commission charged with writing *Gaudium et spes*) regarding the request to the Vatican to have *Gaudium et spes* “acknowledge the Church’s

error with regard to Galileo” but was answered with: “*It would ask the Church to say: I have been wrong*” (*ibid.*, p. 7, the italicized words are Parente’s, the non-italicized are McMullin’s). On the issue of Scripture interpretation, McMullin gives the typical modern apologetic: “The disputed passages in Scripture were simply not relevant to the Copernican issue in the first place: the language of these passages was accommodated to the intended audience and hence not to be taken literally, and in any event astronomical truth lay outside the purposes for which Scripture was intended. But Bellarmine and the qualifiers evidently had set both those arguments aside” (*ibid.*, p. 156). Again, basing his opinion on the idea that heliocentrism is a fact of science and that Pope Leo XIII’s 1893 encyclical *Providentissimus Deus* accommodated the language of appearance to explain Scripture’s cosmology (NB: in actuality, Leo referred neither to Scripture’s cosmology nor the Galileo affair, as we will see later in this chapter), McMullin levies his strongest indictment against the 17th century Church: “...it follows that the rejection by Bellarmine and the qualifiers of the application of these principles constituted an objective error on their part, as well as on the part of Paul V and the members of the Holy Office who ratified the qualifiers’ condemnation of the Copernican theses on the grounds that they were ‘contrary to Scripture’” (*ibid.*, pp. 158-159, emphasis added). It is clear that McMullin and his colleagues desired the same sort of admission from John Paul II’s speech but did not receive it.

³⁹¹ John Paul II, “Discourse on the One Hundredth Anniversary of the Birth of Albert Einstein,” *Acta Apostolicae Sedis* (Vatican: Tipografia Poliglotta Vaticana), 1979, vol. 71, p. 1464.

³⁹² As an example of the variance, Maurice Finocchiaro remarks from his pro-Galilean stance that, “John Paul did not, however, explicitly endorse Poupard’s report. Although he accepted some particular conclusions, in the context of the papal speech those theses lost the anti-Galilean flavor and implications they possessed in Poupard’s speech. If this interpretation of John Paul’s speech is correct, and if it is correct to say that the Vatican commission studies had been acquiring an increasing anti-Galilean tone and apologetic flavor, then perhaps one may conjecture that the pope was closing the Galileo case because he wanted to close the retrial of Galileo at the hand of people such as Poupard and Brandmüller” (*Retrying Galileo, 1633-1992*, Berkeley, University of California Press, 2005, p. 357).

³⁹³ Original story from *The Guardian* of September 25, 1989, followed in *L’Osservatore Romano*, October 10, 1989. Here the pope says only that Galileo was “an essential stage in the methodology,” and that his work was merely part of “the journey towards the world’s knowledge of nature,” not that heliocentrism is a proven fact of science.

³⁹⁴ The only authoritative guidelines we have for assessing the different degrees of assent/respect due to non-infallible papal teaching are the three criteria given in *Lumen Gentium* 25 §1. The Council says we must respond in each case according to the Pope’s “mind and intention,” which “is made known principally either by the character of the documents in question (NB: the 1992 papal allocution to the Pontifical Academy of Science is a low-level papal document), or by the frequency with which a certain doctrine is proposed (NB: the 1992 allocution is the only one in which a pope said there were errors in the Galileo case), or by the manner in which the doctrine is formulated (NB: the 1992 allocution contains no solemn or authoritative language, and nothing stating that all Catholics must hold the position espoused by the speech). On such low-level papal statements we are to treat the pope’s opinion with respect, but we have the right and duty to disagree if we believe he is wrong. Per Canon 212 §3 of the 1983 Code of Canon Law: “According to the knowledge, competence, and prestige which they possess, they [“the Christian faithful” from §2] have the right and even at times the duty to manifest to the sacred pastors their opinion on matters which pertain to the good of the Church and to

make their opinion known to the rest of the Christian faithful, without prejudice to the integrity of the faith and morals, with reverence toward their pastors, and attentive to common advantage and the dignity of persons.”

³⁹⁵ McMullin reveals that the address to the Pontifical Academy of Science was a “speech prepared for the pope” (*The Church and Galileo*, p. 2).

³⁹⁶ Poupard gave a speech prior to and on the same day as the pope on October 31, 1992 to the Pontifical Academy of Science, but records of this are not readily available. Poupard’s speech is titled: “Address at the Conclusion of the Proceedings of the Pontifical Study Commission on the Ptolemaic-Copernican Controversy in the 16th and 17th Centuries,” and an English translation was published in *Origins* 22, Nov. 12, 1992, pp. 370-375, with the original in *Après Galilée*, Paris: Desclée de Brouwer, 1994, pp. 93-97. As for the commission itself, the Vatican Secretary of State, Cardinal Agostino Casaroli, named Cardinal Gabriel-Marie Garrone as president of the commission, and Fr. Enrico di Rovasenda, who was then chancellor of the Pontifical Academy of Science from 1974 to 1986, as his assistant. Six others were invited to the commission: Archbishop Carlo Maria Martini for the exegetical section; Archbishop Paul Poupard for the culture section; Professor Carlos Chagas and Fr. George Coyne for the section on scientific and epistemological questions; Msgr. Michele Maccarrone and Fr. Edmond Lamalle for historical and juridical questions.

³⁹⁷ It is also significant that Cardinal Poupard aligns himself more with the liberal school of both theology and biblical exegesis. He is also known to have a great admiration for Pierre Teilhard de Chardin. Teilhard’s works were banned by the Church in the monitum of John XXIII of June 30, 1962 stating that his books contained “ambiguities and grave doctrinal errors.” Regarding the Galileo affair, Teilhard made a direct connection between the fall of geocentrism and the rise of evolutionary theory and a rejection of the traditional teaching on Original Sin: Teilhard writes: “As a result of the collapse of geocentrism, which she has come to accept, the Church is now caught between her historico-dogmatic representation of the world’s origin, on the one hand, and the requirements of one of her most fundamental dogmas on the other – so that she cannot retain the former without to some degree sacrificing the latter. With the end of geocentrism, what was emerging was the evolutionist point of view. All that Galileo’s judges could distinctly see as menaced was the miracle of Joshua. The fact was that in consequence the seeds of decomposition had been introduced into the whole of the Genesis theory of the fall: and we are only today beginning to appreciate the depth of the changes which at that time were already potentially completed.” (Teilhard de Chardin, “Fall, Redemption and Geocentrism,” *Christianity and Evolution*, 1969, 1971, pp. 37-38). Fr. George Coyne, former director of the Vatican observatory, who is mentioned in the pope’s speech as one who worked in close collaboration with Poupard, also aligns himself more with the liberal theological and exegetical school of thinking, as well as being a very vocal advocate of both heliocentrism and evolution (having also denounced Intelligent Design as “unscientific”), and has been highly critical of how the Church treated Galileo. Coyne believes that neither Bellarmine nor the popes following listened to Galileo’s scientific claims, stating, “neither in 1616 nor in 1633 was any science discussed” (“The Church’s Most Recent Attempt to Dispel the Galileo Myth,” p. 342). But this assertion is certainly not true. Science may not have been the main focus, but it was certainly discussed, and both Bellarmine and Urban VIII told Galileo he had no scientific proof despite Galileo’s claims to the contrary.

³⁹⁸ *L’Osservatore Romano*, Nov. 1992, pp. 2-3, as cited in Atila S. Guimarães, “The Swan Song of Galileo’s Myth,” in *Tradition in Action.*, nd, np.

³⁹⁹ The words of Fr. George Coyne, commission member for science and epistemology (“The Church’s Most Recent Attempt to Dispel the Galileo Myth,” in *The Church and Galileo*, p. 354).

⁴⁰⁰ *Challenge* newspaper, London, Dec. 1979, page 13.

⁴⁰¹ The expression “hoist by one’s own petard” first appeared in Shakespeare’s play, *Hamlet*, meaning “to blow oneself up with one’s own bomb, be undone by one’s own devices.”

⁴⁰² Discourse to the Symposium, Nos. 2 & 3. Fantoli, *Galileo: For Copernicanism and for the Church*, p. 509; *The Case of Galileo: A Closed Question?*, p. 235.

⁴⁰³ John Paul II himself said just one month into his pontificate: “We are now standing in the face of the greatest historical confrontation humanity has gone through. I do not think that wide circles of the American society or wide circles of the Christian community realize this fully. We are now facing the final confrontation between the church and the anti-Church, of the Gospel versus the anti-Gospel” (*Wall Street Journal*, Nov. 9, 1978).”

⁴⁰⁴ John Paul II, address to the Pontifical Academy of Science, November 4, 1992, ¶8. John Paul II said a similar thing to the PAS in an address on the subject of evolution on October 22, 1996: “For my part, when I received those taking part in your academy’s plenary assembly on October 31, 1992, I had the opportunity with regard to Galileo to draw attention to the need of a rigorous hermeneutic for the correct interpretation of the inspired word. It is necessary to determine the proper sense of Scripture, while avoiding any unwarranted interpretations that make it say what it does not intend to say. In order to delineate the field of their own study, the exegete and the theologian must keep informed about the results achieved by the natural sciences (cf. AAS 85 1/81993 3/8, pp. 764-772; address to the Pontifical Biblical Commission, April 23, 1993, announcing the document on the The Interpretation of the Bible in the Church: AAS 86 1/81994 3/8, pp. 232-243).

⁴⁰⁵ Quoted from Casaroli, 1981, as translated by M. Segre in “Light on the Galileo Case?” in *Isis* 88, pp. 500-501, as cited in *Retrying Galileo*, p. 344.

⁴⁰⁶ *The Literal Interpretation of Genesis* Book 2, Chapter 9, paragraph 21.

⁴⁰⁷ Encyclical letter of 1893, *Providentissimus Deus*. The “Fathers,” as we have seen in Chapter 13 were all avowed geocentrists in the face of many of the Greek philosophers and astronomers who were espousing heliocentrism.

⁴⁰⁸ Poincaré’s lecture titled: “L’état actuel et l’avenir de la physique mathématique,” St. Louis, Sept. 24, 1904, *Scientific Monthly*, April, 1956. Commenting on Poincaré’s work, Arthur Webster stated in 1913: “This [special relativity] principle is no less than a fundamental relation between time and space, intended to explain the impossibility of determining experimentally whether a system, say the Earth, is in motion or not” (“Henri Poincaré as Mathematical Physicist,” *Science*, Vol. 38, Issue 991, Dec. 26, 1913, p. 907).

⁴⁰⁹ *The Evolution of Physics: From Early Concepts to Relativity and Quanta*, Albert Einstein and Leopold Infeld, New York, Simon and Schuster, 1938, 1966, p. 212. As Fred Hoyle notes: “...according to the physical theory developed by Albert Einstein [the heliocentric and geocentric systems] are indeed physically equivalent to each other” (*Astronomy and Cosmology*, p. 8).

⁴¹⁰ A manuscript of his course in astronomy from 1570-72 is housed at the University of Louvain.

⁴¹¹ Wolfgang Smith, *The Wisdom of Ancient Cosmology: Contemporary Science in Light of Tradition*, p. 149. Feyerabend adds: “the tradition defended by the Church had interesting ancestors in antiquity and has progressive defenders today....And almost all philosophers of science writing today would have agreed with Bellarmino that Copernicus’s case was very weak indeed” (*Farewell to Reason*, pp. 248, 257).

⁴¹² For example, Pietro Redondi, in his book *Galileo Heretic* (1982, 1987), says that the real reason the Church was so hard on Galileo was not because of Copernicanism but because Galileo’s theory of “atomism” in *The Assayer* (1623) was in direct conflict with the doctrine of the Eucharist, despite the fact that there is no indication in the official documents that such was the case. As Feyerabend notes: “what Galileo says about atomism

in the *Assayer* is much too brief and indefinite to conflict with transubstantiation (it is an aside almost, not an elaborate statement) and with the exception of a rather problematic document no such conflict was perceived” (*Against Method*, p. 115).

⁴¹³ Maurice Finocchiaro, *Retrying Galileo*, 2005, p. ix.

⁴¹⁴ *Ibid.*, p. 348. Neither the laws of gravity, stellar aberration, stellar parallax, nor the deflection of falling bodies, prove that the earth is in motion. Every presumed proof for heliocentrism can be equally explained from a geocentric perspective, since the same forces and motions will occur if the Earth is rotating in a fixed universe or the universe is rotating around a fixed Earth. As far as modern science is concerned, there is no difference between these two models. But Finocchiaro is apparently oblivious to the alternative explanation, concluding that Newton’s laws can only show that “the sun has such a greater mass and is so much closer to the said center [of mass] that it moves much less than all the other planets” and thus concludes “the principle foundation of the prohibition [against Galileo and the heliocentric system] no longer subsists...” (*ibid.*, p. 145). Finocchiaro’s claim of the discovery of parallax by Calendrelli in 1806 is dubious. As Macpherson notes: “The one pre-Herschelian problem in sidereal astronomy was the distance of the stars. Owing to its bearing on the Copernican theory, the problem was attacked by the astronomers of the seventeenth and eighteenth centuries. Herschel made numerous attempts to detect the parallax of the brighter stars, but failed. Meanwhile there had been many illusions. Piazzi believed that his instruments – which in reality were worn out and unfit for use – had revealed parallaxes in Sirius, Aldebaran, Procyon and Vega; Calendrelli, another Italian, and John Brinkley (1763-1835), Astronomer Royal of Ireland, were similarly deluded; and in 1821 it was shown by Friedrich Georg Wilhelm Struve (1793-1864), the great German astronomer, that no instrument then in use could possibly be successful in measuring the stellar parallax” (Hector Macpherson, *A Century’s Progress in Astronomy*, William Blackwood and Sons, Edinburgh and London, 1906, pp. 150-151).

⁴¹⁵ Fantoli tries to escape the scholarly consensus on this point by suggesting that Galileo meant his interpretation of Joshua 10 to be an “ad hominem” attack against those who insisted that Joshua really intended to stop the sun, but there is no suggestion in Galileo’s words for such a conclusion. It appears to be another case, frequently employed in his book, of Fantoli seeking to insulate Galileo from criticism and promote the heliocentric system (Annibale Fantoli, *Galileo: For Copernicanism and for the Church*, pp. 207-208).

⁴¹⁶ This particular contradiction was noticed by Maurice Finocchiaro in the analysis of Carlos Chagas’ Preface to Rinaldo Fabris’ 1986 monograph on Galileo published by the Pontifical Academy of Sciences. It is also pointed out that “contemporary theologians were split about whether Scripture was a philosophical authority” (*Retrying Galileo*, p. 347).

⁴¹⁷ Austin Flannery, *Vatican Council II, The Conciliar and Post Conciliar Documents*, New York, Costello Publishing Co. second printing, 1977, p. 757. The edition of Walter M. Abbot has a slightly different syntax: “Therefore, since everything asserted by the inspired authors or sacred writers must be held to be asserted by the Holy Spirit, it follows that the books of Scripture must be acknowledged as teaching solidly, faithfully and without error that truth which God wanted put into sacred writings for the sake of salvation.” Flannery puts the clause “for the sake of our salvation” immediately after “God,” thus indicating God’s motivation for giving us Scripture, *i.e.*, so that we can be saved. In the Abbott edition, “for the sake of our salvation” is put at the end of the sentence and which might suggest that it modifies “truth” rather than “God.” For a thorough analysis and refutation of this thesis please see Fr. Brian Harrison’s penetrating critique: “The Truth and Meaning of Scripture According to *Dei Verbum 11*,” in *Living Tradition*, No. 59, July 1995 located at the archives of the rcforum.org.

⁴¹⁸ *New Jerome Biblical Commentary*, p. 1169.

⁴¹⁹ *The Virginal Conception and Bodily Resurrection of Jesus*, Paulist Press, 1973, pp. 8-9. He adds: "Historical and critical studies of doctrine may lead to a similar modification of an over-simplified understanding of the infallibility of Church teaching....While the public admission of historical relativity in doctrinal formulations is a recent phenomenon in official Catholicism....A clear example is the variation in the last 125 years in the presentation of the Church's teaching about evolution. The Church has infallibly taught the doctrine that God was specially involved in creating man in His image and likeness. For almost 1900 years that theological doctrine was interpreted to include the how of man's creation, namely, by direct divine action forming man's body from the earth, and woman's body from man's. Today no serious theologian accepts this understanding of the how, because of the scientific evidence favoring evolution; yet the changed understanding of the how has not negated the infallibility of the Church's teaching for we have learned to distinguish between the theological insight and the physical imagery in which it was clothed" (*ibid*, p. 9).

⁴²⁰ *Pale Blue Dot*, pp. 40, 42.

⁴²¹ Immediately after the sentence "...the books of Scripture, firmly, faithfully and without error, teach that truth which God, for the sake of our salvation, wished to see confided to the sacred Scriptures," *Dei Verbum* 11 gives footnotes from five sources stating that Scripture is inerrant in its totality. They are: (1) St. Augustine's *The Literal Interpretation of Genesis* 2, 9, 20 and *Epistle* 82, 3. (2) St. Thomas, *De Veritatis*, q. 12, a. 2; (3) The Council of Trent, Ses. IV, *de canonicis Scripturas* (Denz. 783; (4) Leo XIII's *Providentissimus Deus*: EB 121, 124, 126, 127; (5) Pius XII's *Divino Afflante*: EB 539. None of these sources state or suggest that Scripture is only inerrant when it speaks on salvation.

⁴²² e.g., Baptism – John 3:5; Confession – John 20:23; Eucharist and Mass – Matthew 26:26; John 6:54; Marriage and Divorce – Matthew 19:3-9; Extreme Unction – James 5:14, etc.

⁴²³ "The Church's Most Recent Attempt to Dispell the Galileo Myth," p. 344.

⁴²⁴ From final 1633 sentence against Galileo: "Che il sole sia centro del mondo et immobile di moto locale, è propositione assurda e falsa in filosofia, e formalmente heretica, per essere espressamente contraria alla Sacra Scrittura" ("The proposition that the sun is the center of the world and does not move from its place is absurd and false philosophically and formally heretical, because it is expressly contrary to the Holy Scripture"), as cited in *Galileo E L'Inquisizione*, Antonio Favaro, 1907, p. 143; and *Le Opere di Galileo Galilei*, Antonio Favaro, p. 403.

⁴²⁵ "The Church's Most Recent Attempt to Dispell the Galileo Myth," in *The Church and Galileo*, p. 354. Coyne's reference to "both discourses" refers to Poupard's "Address at the Conclusion of the Proceedings of the Pontifical Study Commission on the Ptolemaic-Copernican Controversy in the 16th and 17th Centuries," *Origins* 22 (Nov. 12, 1992), pp. 370-375 in English, with the original in *Après Galilée* (Paris: Desclée de Brouwer, 1994), pp. 93-97, and the actual address given by Pope John Paul II. Both speeches were given on October 31, 1992, with Poupard's preceeding the Pope's.

⁴²⁶ "The Church's Most Recent Attempt to Dispell the Galileo Myth," in *The Church and Galileo*, pp. 345-346.

⁴²⁷ "The Church's Most Recent Attempt to Dispell the Galileo Myth," in *The Church and Galileo*, pp. 345-346.

⁴²⁸ *The Church and Galileo*, p. 354. Coyne adds: "In the Galileo case the historical facts are that further research into the Copernican system was forbidden by the decree of 1616 and then condemned in 1633 by official organs of the Church with the approbation of the reigning pontiffs" (*ibid*).

⁴²⁹ "The Church's Ban on Copernicanism," in *The Church and Galileo*, p. 159.

⁴³⁰ "...mentre sento che essi pretendono di poter costringer altri, con l' autorità della Scrittura, a seguire in dispute naturali quella opinione che pare a loro che più consuoni con I luoghi di qualla, stimandosi insieme di non essere in obbligo di solvere le ragioni o esperienze in contrario" (*Le Opere di Galileo Galilei*, vol. 5, pp. 323-324, translated by Finocchiaro).

⁴³¹ *Le Opere di Galileo Galilei*, vol. 5, p. 322.

⁴³² Galileo was well aware of this dimension of the contention between himself and the Church. In a June 8, 1624 letter to Federico Cesi (one of the censors later assigned by Riccardi to edit Galileo's *Dialogo*) he remarks: "...ma che non era da temere che alcuno fosse mai per dimostrarla necessariamente vera" ("that it was not to be feared that anyone would ever be able to demonstrate it as necessarily true") in *Le Opere di Galileo Galilei*, vol. 13, p. 182.

⁴³³ "The Church's Ban on Copernicanism," in *The Church and Galileo*, pp. 172-173.

⁴³⁴ Here Coyne adds a footnote: "Paolo Maffei, *Giuseppe Settele, il suo diario e la questione galileiana* ["Giuseppe Settele: His Diary on the Galileo Question"] (Foligno: Edizione dell'Arquata, 1987), shows that, although the imprimatur to Settele's book was a *de facto* recognition of Copernicanism, it did not refer at all to the Galileo affair. He furthermore shows that Settele had hoped that his case would have brought the Church to reconsider that affair."

⁴³⁵ "The Church's Most Recent Attempt to Dispell the Galileo Myth," in *The Church and Galileo*, p. 346.

⁴³⁶ Annibale Fantoli, *Galileo: For Copernicanism and the Church*, p. 520.

⁴³⁷ Paul Poupard, "Galileo Case Is Resolved," *L'Osservatore Romano*, November 4, 1992, weekly edition in English.

⁴³⁸ *Retrying Galileo*, p. 426, n. 68.

⁴³⁹ As worded by Ernan McMullin, editor of *The Church and Galileo*, p. 6.

⁴⁴⁰ As noted by Finocchiaro in *Retrying Galileo*, p. 154.

⁴⁴¹ "Thesis" is the word used by Fr. Coyne in the above quoted sentence: "...the book of Canon Settele, *Elements of Optics and Astronomy* in 1822, in which Copernicanism was presented as a thesis and no longer as a mere hypothesis," Fantoli concurs, stating: "This volume [Settele's] would teach the Copernican system as a thesis and not just a hypothesis" (*Galileo: For Copernicanism and the Church*, p. 497). In general parlance, a "hypothesis" is a proposition that is merely assumed, with little or no evidence, to serve as the basis for initiating the reasoning process. A "theory" is an explanation that is based on at least some evidence that then leads one to reason out a plausible solution. A "thesis" is a conviction of a certain viewpoint that is put forth in anticipation of objections being weighed against it in order to determine its validity. A thesis is not, however, a physical fact, and thus George Sim Johnston's comment: "the work of Canon Settele, in which Copernicanism was presented as a physical fact and no longer a hypothesis" is stretching the truth just a bit (George Sim Johnston, "The Galileo Affair," Princeton, NJ, Septer Press, nd, p. 8, emphasis added). In any case, the editor, Ernan McMullin makes a comment that should be addressed. He writes: "It took the intervention of the pope, Pius VII, to override Anfossi's logic and to prod the Holy Office to decide (though not to publish their decision) that Copernicanism was no longer theologically objectionable. The decision could be changed, it was argued, because now the heliocentric alternative had been, in effect, demonstrated, so the situation was no longer what it had been for the theologians of 1616 and 1633" (*The Church and Galileo*, p. 6). The problem with McMullin's analysis is that the Church of 1616 was not asking for a "demonstration" of Copernicanism, for there were plenty of ways one could do so, both then and now. But a "demonstration" is nothing more than a workable model. No one has argued that a sun-centered and earth-moving model is unworkable or undemonstrable. Rather, the 1616 Holy Office protested that this very model had not been

“irrefutably proven.” The crucial difference between demonstration and proof is the hinge upon which this debate rests. Since at most only one of the two models could be correct, the Church was required to adhere to the model of Scripture and Tradition unless it could be proven absolutely that she was wrong in doing so.

⁴⁴² Antonio Favaro, *Galileo e l’Inquisizione*, pp. 30-31.

⁴⁴³ From the final 1633 sentence against Galileo: “Che il sole sia centro del mondo et immobile di moto locale, è propositione assurda e falsa in filosofia, e formalmente heretica, per essere espressamente contraria alla Sacra Scrittura” (“The proposition that the sun is the center of the world and does not move from its place is absurd and false philosophically and formally heretical, because it is expressly contrary to the Holy Scripture”), as cited in *Galileo E L’Inquisizione*, Antonio Favaro, 1907, p. 143. In his Sept. 18, 1632 dialogue with Francesco Niccolini, Pope Urban said: “it was not the first time that books already approved by Inquisitors were then rejected and prohibited here, because this had happened many times” (Finocchiaro, *The Galileo Affair*, p. 235).

⁴⁴⁴ As Finocchiaro reports: “The Vatican, however, did not forget the matter. There is evidence that in 1835 it made a further attempt to retrieve the file, but to no avail. Unexpectedly, however, in 1843 it was returned to the Holy See by the nuncio to Vienna, to whom it had been given by Blacas’s widow” (*Retrying Galileo*, p. 181). Fantoli adds: “...one part of the processi (trial documents) of the Holy Office and of the Inquisition...were lost” (*The Case of Galileo: A Closed Question?* 2012, p. 225).

⁴⁴⁵ From Cardinal Poupard’s “Address” to the Pontifical Academy of Science on October 31, 1992, no. 3, ¶ 2 and no. 4, ¶ 1.

⁴⁴⁶ “The Church’s Most Recent Attempt to Dispel the Galileo Myth,” in *The Church and Galileo*, pp. 346-347. The editor, Ernan McMullin, concurs: “In 1741, Galileo’s *Dialogo* received an imprimatur as part of a collected edition of Galileo’s works. But there was a catch. It had to be prefaced with a disclaimer...the work was to be regarded as no more than a “mathematical hypothesis.” It also had to contain the texts of the sentence and abjuration and had to substitute the “earth’s apparent motion” for “the earth’s motion” in the marginal postils. It was thus far from a revocation of the 1616 ban on the *Dialogue*; indeed, it effectively changed nothing with regard to the theological status of Copernicanism” (*The Church and Galileo*, pp. 5-6).

⁴⁴⁷ From Poupard’s “Address,” No. 5, ¶ 3, as cited in Coyne, p. 352.

⁴⁴⁸ Robert Hooke, “An Attempt to Prove the Motion of the Earth from Observations,” (London, 1674), p. 3. Hooke writes: “Whether the Earth move or stand still hath been a problem, that since Copernicus revived it, hath much exercised the Wits of our best modern Astronomers and Philosophers, amongst which notwithstanding there hath not been any one who hath found out a certain manifestation either of the one or the other Doctrine” (cited in *Parallax*, Alan Hirshfeld, p. 144.)

⁴⁴⁹ James Bradley, “An account of a new-discovered motion of the fixed stars,” *Philosophical Transactions*, 35 (1727–28), 637–61.

⁴⁵⁰ Owen Gingerich, at St. Edmunds Public Lecture series, titled: “Empirical Proof and/or Persuasion,” March 13, 2003, taken from Pierre-Noël Mayaud, S.J., *La Condamnation des Livres Coperniciens et sa Révocation: à la lumière de documents inédits des Congregation de l’Index et de l’Inquisition*, [“The Condemnation of the Copernicus’ Book and its Revocation: In the Light of Documents Edited by the Index of the Inquisition”] Rome: Editrice Pontificia Università Gregoriana, 1997, no page number.

⁴⁵¹ See Vol. I of *Galileo Was Wrong: The Church Was Right* for a detailed explanation of parallax in both the heliocentric and geocentric models. See CDrom of parallax animations.

⁴⁵² Article by John Gerard, *Catholic Encyclopedia*, New York, Robert Appleton Publishing, Vol. VI, p. 344. We note here Gerard’s attempt to insulate the popes (Paul V and Urban VIII) from direct involvement in the “deplorable error” as he resorts to the euphemistic and

vague wording “ecclesiastical authorities” as the culprits in the affair. This is akin to Cardinal Poupard’s use of “the errors of the theologians” that was placed in the address of John Paul II to the Pontifical Academy of Science in 1992.

⁴⁵³ *Farewell to Reason*, p. 260. He adds that in the scientific community, “...the idea of free and independent research is a chimera.” With regard to “scientific knowledge-claims,” Feyerabend notes: “...we have seen that even the liberal climate of the modern age has not prevented scientists from demanding the same kind of authority which Bellarmino possessed as a matter of course but exercised with much greater wisdom and grace.” Regarding the Church’s “howling with the wolves,” he adds: “In 1982 Christian Thomas and I organized a seminar at the Federal Institute of Technology in Zürich with the purpose of discussing how the rise of the sciences had influenced the major religions and other traditional forms of thought. What surprised us was the fearful restraint with which Catholic and Protestant theologians treated the matter – there was no criticism either of particular scientific achievements or of the scientific ideology as a whole” (*ibid*).

⁴⁵⁴ *Providentissimus Deus*, 1893, ¶17.

⁴⁵⁵ *De controversiis*, I, I, 4, 12, as found in Roberto Cardinal Bellarmino, S. J., *Opera omnia*, cited in Blackwell’s *Galileo, Bellarmine and the Bible*, p. 32.

⁴⁵⁶ “Therefore we disregard this possibility....the unwelcome position of a favored location must be avoided at all costs....such a favored position is intolerable...Therefore, in order to restore homogeneity, and to escape the horror of a unique position...must be compensated by spatial curvature. There seems to be no other escape” (*The Observational Approach to Cosmology*, Clarendon Press, 1937, pp. 50, 51, 58).

⁴⁵⁷ Italian original: L’errore dei teologi del tempo, nel sostenere la centralità della terra, fu quello di pensare che la nostra conoscenza della struttura del mondo fisico fosse, in certo qual modo, imposta dal senso letterale della S. Scrittura.

⁴⁵⁸ The 1633 sentence against Galileo stated that heliocentrism was: è proposizione assurda e falsa in filosofia, e formalmente heretica (“an absurd proposition and false in philosophy and formally heretical”) cited in *Galileo E L’Inquisizione*, Favaro, p. 143. As we will see later, Maurice Finocchiaro’s *The Galileo Affair* has one of the better confirmations of Urban’s appeal. In the chapter titled “Diplomatic Correspondence 1632-1633” he shows that the bulk of the correspondence was between Pope Urban VIII and the ambassador to the Duke of Tuscany, Francesco Niccolini, detailing Urban’s outright rejection of Galileo’s assault on “Holy Scripture, religion, and Faith,” wherein Urban implored the Duke to help in “shielding Catholicism from any danger” because “this work of his is indeed pernicious, and the matter more serious than his Highness thinks” (*ibid.*, pp. 232, 235, 236, quotes taken directly from Urban VIII as recorded in *Le Opere di Galileo Galilei*, vol. 14, pp. 388-393).

⁴⁵⁹ “...dictum propositionem esse stultam et absurdam in philosophia, et formaliter haeticam, quatenus contradicit expresse sentiis Sacrae Scripturae in multis locis...” (*Le Opere di Galileo Galilei*, Favaro, vol. 19, p. 321).

⁴⁶⁰ McMullin reveals that the address to the Pontifical Academy of Science was a “speech prepared for the pope” (*The Church and Galileo*, p. 2).

⁴⁶¹ Cf. Lv 19:28; 1Co 6:19-20.

⁴⁶² As opposed to the Principle of Non-Contradiction in which at most one is true, but both can be false; or the Principle of the Excluded Middle in which at least one is true but both can be true.

⁴⁶³ Galileo wrote it quite poetically in his native Italian to Madama Cristina di Lorena: “...ciò è l’intenzione dello Spirito Santo essere d’insegnarci come si vadia al cielo, e non come vadia il cielo” (“that is the intention of the Holy Spirit which is to teach us how to go to heaven, and not how the heavens go”) and attributes it as coming from “Io qui direi quello che intesi da persona ecclesiastic costituita in eminentissimo grado” (“Here I refer

to the understandings of an ecclesiastical person in a very eminent position”), who most suppose is Cardinal Cesare Baronio (*Le Opere di Galileo Galilei*, 1968, vol 5, p. 319, lines 25-28). Stillman Drake claims that “a marginal note by Galileo assigns this epigram to Cardinal Baronius” who “visited Padua with Cardinal Bellarmine in 1598, and Galileo probably met him at that time” (*Discoveries and Opinions of Galileo*, p. 186).

⁴⁶⁴ Pope Pius X, encyclical of March 12, 1904, *Iucunda Sane*, 35.

⁴⁶⁵ “But you have been anointed by the Holy One, and you all know....but the anointing which you received from him abides in you, and you have no need that any one should teach you; as his anointing teaches you about everything, and is true, and is no lie, just as it has taught you, abide in him.”

⁴⁶⁶ *Lumen Gentium* 12 adds this footnote: “(The *sensus fidei* refers to the instinctive sensitivity and discrimination which the members of the Church possess in matters of faith. – Translator.)”

⁴⁶⁷ *Lumen Gentium* 12 adds this footnote: “See St. Augustine, *De Praed. Sanct.* 14, 27: *PL* 44, 980.” This refers to Augustine’s work *Predestination of the Saints*, Book II, Chapter 14: This grace He placed “in Him in whom we have obtained a lot, being predestinated according to the purpose of Him who worketh all things.” And thus as He worketh that we come to Him, so He worketh that we do not depart. Wherefore it was said to Him by the mouth of the prophet, “Let Thy hand be upon the man of Thy right hand, and upon the Son of man whom Thou madest strong for Thyself, and we will not depart from Thee.” This certainly is not the first Adam, in whom we departed from Him, but the second Adam, upon whom His hand is placed, so that we do not depart from Him. For Christ altogether with His members is--for the Church’s sake, which is His body – the fulness of Him. When, therefore, God’s hand is upon Him, that we depart not from God, assuredly God’s work reaches to us (for this is God’s hand); by which work of God we are caused to be abiding in Christ with God – not, as in Adam, departing from God. For “in Christ we have obtained a lot, being predestinated according to His purpose who worketh all things.” This, therefore, is God’s hand, not ours, that we depart not from God. That, I say, is His hand who said, “I will put my fear in their hearts, that they depart not from me.”

⁴⁶⁸ “And we also thank God constantly for this, that when you received the word of God which you heard from us, you accepted it not as the word of men but as what it really is, the word of God, which is at work in you believers.”

⁴⁶⁹ “Beloved, being very eager to write to you of our common salvation, I found it necessary to write appealing to you to contend for the faith which was once for all delivered to the saints.”

⁴⁷⁰ *The Documents of Vatican II*, Austin Flannery, O.P., NY: Costello Publishing, 1975, p. 363.

⁴⁷¹ Fr. Walter Brandmuller, Vatican’s Chief Historian, *Light and Shadows: Church History amid Faith, Fact and Legend*, Ignatius Press, 2009, p. 13.

⁴⁷² As stated by Maurice Finocchiaro in *Retrying Galileo*, p. 278.

⁴⁷³ *Philosophiæ Naturalis Principia Mathematica*, Isacco Newtono, PP. Thomæ Le Seur & Francisci Jacquier, Genevæ, MDCCXXXIX [1739]. Original Latin: “DECLARATIO: Newtonus in hoc tertio Libro Telluris motæ hypothesin assumit. Autoris Propositiones aliter explicari non poterant, nisi eadem quoque factâ hypothesi. Hinc alienam coacti sumus gerere personam. Cæterum latis a summis Pontificibus contra Telluris motum Decretis nos obsequi profitemur.” Above translation taken from Rev. William W. Roberts in *The Pontifical Decrees Against the Doctrine of the Earth’s Movement*, p. 53.